Izaak Walton League Monthly

We Pledge Ourselves to do our best to Restore to Posterity the Outdoor America of our Ancestors

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Volume I — JUNE, 1923 — Number 10

"When the Forests Go—"

By ROBERT W. CHAMBERS

WHEN the forests go, everything goes—even the climate. You will hear the learned deny this. Sober, scientific gentlemen will refute the assertion. Grave and painstaking statisticians present data to confound you.

On the other hand, that celebrated institution of our country, known in every cross-road hamlet throughout the land as "The Oldest Inhabitant," will confirm the statement in ninety-nine cases out of a hundred.

He will tell you that since his boyhood days the local climate has changed.

Although I am not yet qualified by years and wisdom to take my seat among these reverend Elders of the Republic, still perhaps my life has covered a period sufficient to make some observations of mine not entirely uninteresting both to the Local Sage and to the Soulless Statistician.

If these observations have any value at all, obviously their value is local. Therefore it is of my own locality that I venture to speak, of my home in northeastern New York State.

Imitating the Local Oracle, I begin with "when I was a boy"—if nobody objects. And my first suggestion is that in my district the winters are longer and more severe, and the summers hotter and briefer, than in the days of my early youth—or any former days at all.

The proofs I offer are these: A number of trees, shrubs, and flowers, which at that time grew and flourished in my district, are not now hardy in that climate. The common, fragrant Chinese Honeysuckle will not live there now unless heavily mulched. And even so it remains dwarfed and flowers sparsely, and sooner or later is winter-killed. This also is true of Forsythia or Golden Bell. And as for Wistaria, it is *always* winter-killed now. So is the Trumpet Vine and most roses. Shorter summers with hotter and briefer days, and colder nights, make the growing up of certain animals practically impossible, animals which flourished in my early days.

As for farming, the shortening of summers are threatening both corn and potatoes with the blight of early frost. Nowhere is the hazard greater in farming than in my district where in my youth farming was a perfectly legitimate gamble.

In those days, too, the sycamore grew there and the black walnut. The former, now, will not survive the winters; the latter only with difficulty, and it remains but a poor specimen of tree.

My part of the country was the national home of the beech, maple, oak and white pine. Nobody ever dreamed that *cold* could kill any of these hardy forest trees. In all the history of the colony and state I never had heard of cold weather killing any of these native trees of ours.

But half a dozen years ago or so hundreds of great beeches, oaks, maples were *killed* by cold in my district—trees seventy years old, a hundred, two hundred and even older. Every tree in an apple orchard nearly a hundred years old was killed. And all this took place in my own woods and on my own place. I know of colonial and state records of arctic temperature in New York State. Often is cited the freezing of New York Bay, and the transportation by horses of heavy artillery across the ice to Governour's and Staten Islands. But, I think, what saved the forests in those days was the forest itself, and our full lakes and streams.

But there were no great forests to save the splendid silvery beeches (*Continued on page* 554)

Robert W. Chambers

Defender of America's Out-of-Doors

Izaak Walton League Monthly

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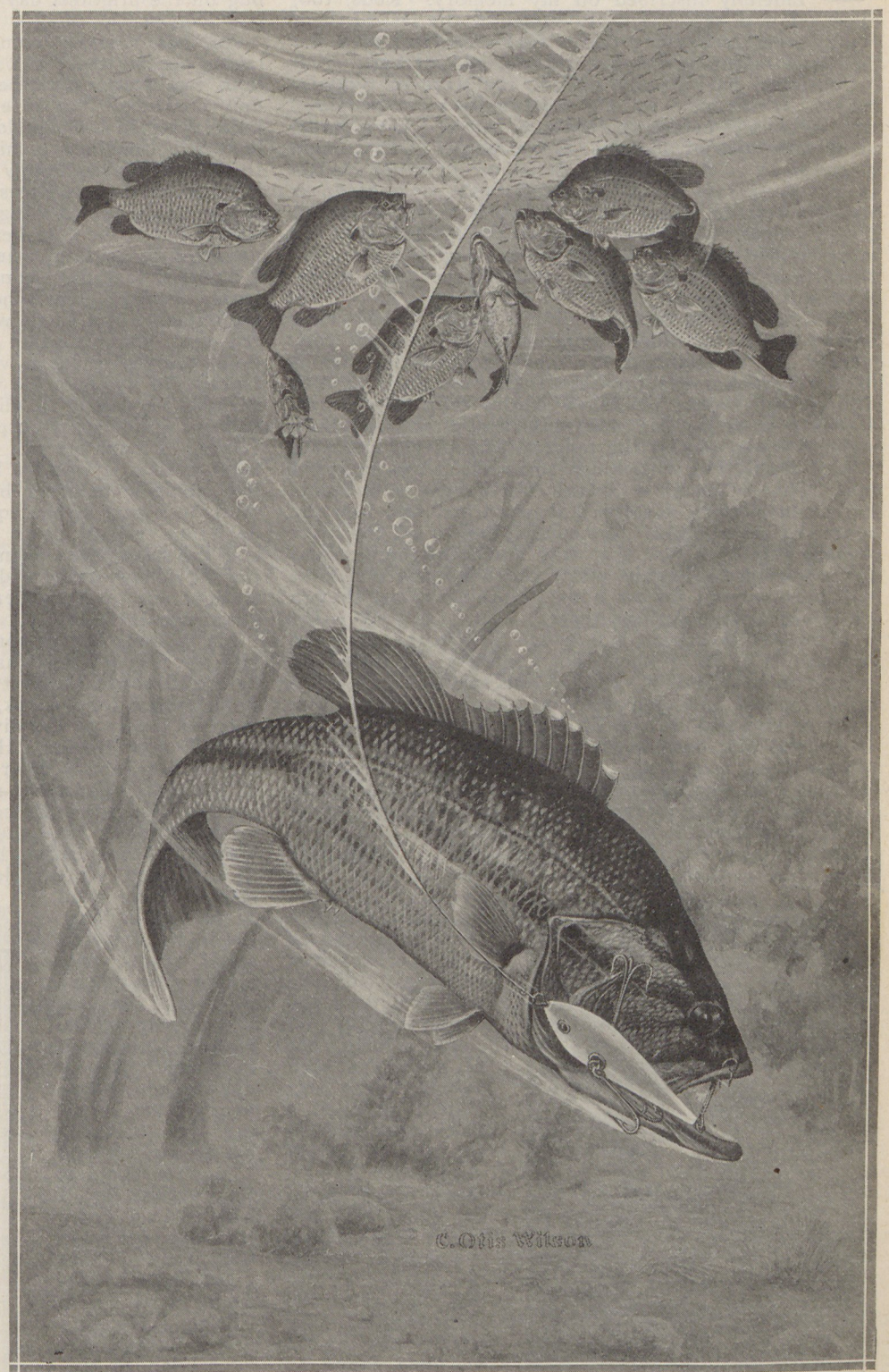
The Black Bass

By COLONEL JOHN A. LEE

"Inch for inch and pound for pound, the gamest fish that swims."

—DR. JAMES A. HENSHALL

Drawing by C. Otis Wilson



Please note when Bass are taken from their spawning beds the baby spawn are unprotected and the prey of all types of little fish—especially sunfish, perch and rock bass.

THE fresh water black bass is a fish that every angler respects as worthy of his steel and deserving of serious study. If he is caught north of the Mason and Dixon line, and weighs as much as five pounds, he is deemed a great prize. If he weighs six or seven pounds, the story of his capture is listened to with smiling incredulity.

It has been said that the fresh water black bass is a born warrior and that, like Napoleon's old guard, he dies but never surrenders. His savage rush at the bait, the swirl and swish of him as he causes the line to cut through the water, his plunge to the bottom as he bends the split bamboo rod, his leap into the air as he tries to loosen the hook, all cause the sportsman's nerves to tingle and his heart to pound with a thrill produced by no other sport.

There are two families of the fresh water black bass that all anglers know, the micropterous salmoides, or large-mouth bass, and the micropterous dolomieu, or small-mouth bass. The former lives in the lakes or deep streams, lurks in quiet waters and usually grows to larger sizes than the small-mouth variety. The latter loves the swift-running waters, rocky shores, and gravelly bottoms, and considers eternal vigilance as the price he has to pay for fat minnows upon which he loves to dine. He is the more lively and active of the two, but does not usually grow so large. Possibly his activity keeps him in training and he does not put on weight as does his relative of the lakes and deep waters.

Black bass, in the spawning season, fashion a nest in the gravel and sand, and therein deposit their spawn. They are the only game fish which possess the maternal and paternal instinct to such an extent that they guard their spawn in the nest, and until the fry are large enough to swim, hide and take care of themselves.

In truth the black bass is one of nature's noblemen, possessed of courage, chivalry, affection for offspring, and other characteristics which commend this Sir Knight

(Continued on page 549)

Pals of Lake and Stream

By OZARK RIPLEY

Memories of Some Fish and Some Fishermen I Have Met.

THE sight of an old fly book brings many reminiscences. I can even see in an old oiled fly line faces I love, streams I worship and a campsite indelibly inscribed on my memory. Rods, too, affect me with retrospect, but somehow the feel of them makes them such living things that they rival even the memories of the companions of lake and stream.

Continued fishing only adds to my store of reminiscence. I visit new waters, continually meet people I have never met before and see new faces. I have many, many memories of anglers. A real angler is the divine masterpiece of the Creator. Somehow or other he has in him those rare qualities—unselfishness, contentedness and devotion to fellow men. There is a reason for all this, I reflect. The hours spent on the stream move far more swiftly than the fastest waters, and the thoughts that live in the mind then are invariably pure and superabundantly blessed.

The memory of the face of the angler I now have before me is one on a small Michigan stream, considered too insignificant for most trout fishing, yet it held a 19-inch redspot. This angler imagined he was fishing, and indeed he fished harder than any mortal I had ever seen. He tried his utmost on that little strip of water to cast the tapered part of his line with a hard dry fly rod with which some friend had equipped him. Then when his awkward efforts were most amazingly conspicuous, I stepped forward and told him the source of his troubles. Immediately he cut off the taper —mind you of a line that was much too high priced for me—then cast again under the willow at which he had been aiming for an hour. Nothing came, though he vowed a whopper was there.

If ever this angler had fished before, he gave no indications of it. I knew that the wary old trout had seen him, could not have failed and said as much. The angler smiled and then we went above. I advised him to strip line and let the little cork bodied "Hopper" I had given him float down beneath the leaning willow. That was an easy task. Then came the flesh of scarlet dots, and for the instant almost every color imaginable. I can remember no happier angler face than the owner of the one that landed that valiant trout.

It is the privilege of an angler's mind to fling back hither and thither, when and where, and do it as often as desired. I can so easily visualize that huge rock which perhaps even centuries before had divided the clear stream and caught a lodgement of debris at each freshet. Just for fun I dropped a black bass bug on top of it, one bright noon day, when every other angler on the river told me it was useless. A twitch of the rod and the fly fell upside down on the swift water. Like a rifle shot came a welcome sound to my ears, and almost as swift as the flight of a bullet I saw a giant small mouth flash from the depths and smash that saltatory deceit. If ever the Creator made a larger small mouth I never saw it. I tried to turn him, but failed. Some day I am going back to that very same rock, drop another black bug on the brightest day I can select, and see just what will happen.

Ozark Ripley, "all dressed up in store clothes."

Another memory comes to me. Seeing and then taking one big trout in a narrow strip of water no wider than two feet, no deeper than three is something to defy credence. But sure as Fate a three pounder was there, lying in a rip under the bank and perhaps would have still remained in his snug abode had not one of those ruddy faced, happy farm boys, of whom one hears more often than one sees them, whispered to me at the supper table one evening, as though it were a weighty secret, not to be told before the profane ears of those unversed in angling, where the massive fellow resided.

Another rambling thought carries me to a lucky time in my fishing career when I shouted for sheer joy at the outcome of a battle with a royal small mouth. That red eyed whopper came to my fly after much coaxing. I did everything for a while to lure him, but his color fancies did not coincide with mine, or to tell the truth, perhaps he caught a glimpse of my bright new blue denim shirt before I suspected it. Anyhow, I tried and I tried. I knew he was there. He could not help but be there, for it was his lair and I had seen him but a few moments before I began casting. Resourcefulness must be a part of the equipment of an angler. I went upstream and sat down for a while, studying the why and the wherefore, when my attention was directed to the big fellow, as he suddenly flung himself full length straight out of the water and missed a lazy dragon fly about six inches.

My fly book always contained a heap of useless things and the peacock herl that seldom I had found use for before, I wound the best I could around a faulty Sneck hook with a long shank, and then anyone would have laughed loudly at the divided wings I fashioned out of an old crow feather. However, it was just what that old bronze Johnny Micropterous had been waiting for all the time! From the middle of the stream—the shoal part—I cast when he connected. The water was too swift to check him suddenly and down the rapid I went with him, letting him have line about as fast as he wanted it. But the devil was in him. He knew that stream better than I; he began doing the most amazing aerial stunts that every instant threatened demolition to my tackle. Finally, he plunged headlong into an old tree top, where to my great happiness he continued his gymnastics, and I saw for the first time a bass that I had hung leap clear over the limbs that would have given him his freedom, and then plunge for the deeper water where later I landed him.

The memory of a certain fishing friend often comes to me. I considered this companion much too deficient in piscatorial knowledge ever to

And—all dressed up in "regular" clothes

take a musky. Trolling he would not do. He announced he was going to take one of the fresh water tigers with a small red Ibis trailer on his spinner and dipsey, despite all my advice that bait casting for the big wicked chaps with such a small inconspicuous lure would never be effective. He smiled pityingly at my announcement, and with a wonderfully accurate wrist functioning cast sent the red thing over a smooth, sand bottom cove between juttings of rush beds. How that tiger did hit! The water fairly churned. Then I rowed like all Nick for deep water, shouting advice and encouragement, though I realized all at once that that sedate, silent chap knew a heap more about the sport than I did. Man and fish fought, fought long and relentlessly. But all the leaps and flashy, circling tail stunts of that big mawed fish were of no avail. Ultimately his circles narrowed and he came to gaff, one of the biggest muskies I had ever beheld taken on a 2/0 hook and by an angler who neither gloated, nor at any time during the fight lost his "savoir faire," though he did not appear to weigh much more than the fish.

Then there was the Pair! The Pair would never learn the art, I feared, but each year they came to fish. The happiness they derived from their efforts was beatific. They were persistently awkward, obdurately crude, and consistently unskillful. In the fastest water where I paddled them they would hang their lure in the trees. When I almost wrenched my back trying to stop the boat, they simply laughed and continued to get hung up at every like opportunity. Every third cast was a back lash, especially when I took the pains to pull them through raging currents that they might drop their lures in a productive pocket. They never caught a fish, but never tired of having me paddle them through the roughest waters. If murder was ever in my heart, it was nearest to being there when I had the Pair astream. I vowed and I vowed never again would I go with them.

When casting a fly they were equally impossible. Breaking tips, especially of my best loved rods, seemed the sport they most enjoyed. The instant I hung a fish, they shouted with glee, inevitably dropped their paddles in the water and permitted the craft to catch in the sweep of the current and ultimately overturn in the most treacherous part of the stream where it took some powerful swimming to gain safety ashore. Then my wrath knew no bounds. I declared I would have nothing more to do with them, and held firmly to this opinion even when the guide came, packed their belongings in his long crazy craft and pushed out into the racing water.

* * * * * * * * *

My memories of pals of lake and stream fade and I find myself alone in camp.. The thing appalls me. Over across the stretch of clear water I can hear the big spring musically vomiting its crystal contents into the river. Back in the cress-lined bay a mocking bird sings with stressing plaintiveness. I look back into the old tent and see solely my own possessions. Lonesomeness comes with weird stride. The big bluff throws a long shadow across the bar, then lengthens and the world is agleam with the crimson of evening. Dusk! Soon the silver flow mirrors twinkling stars, then the moon climbs over the Eastern ridges and softens the universe with its light, and I find myself longing, mighty hard for pals of lake and stream.

"Boy, Page Henry Ford!" A Letter

***Lovingly dedicated to the memory of John Burroughs**—"He no doubt showed you a good many things in Nature that most people don't see or know about, for he knew the intimate side of Nature and he learned a good deal of that from fishing trips one time or another."*

By EL COMANCHO
(W. L. PHILLIPS)

MY dear Henry:

I have never met you personally, but that's your fault for I have no office boy and I never turn anybody down who wants to see me so all you have to do any time is to drop in or even just call me up on the 'phone and say you'd like to go fishin' or something.

I don't know whether you like to fish or not but if you don't you really ought to go every once in a while anyhow for several reasons but mainly because going fishin' is the friendliest business in the world and it pays such big returns in so many ways that a fellow can't afford to stay away from it.

I'd like to make a date to go fishin' with you most anywhere any time you say—no big, elaborate time-taking trip, you understand, but just a li'l fishin' jaunt near home; you go and buy you a hook and line and a pole somewhere—if you didn't know just what to get why ask Charlie Antoine—he knows and he'll tell you right—and I'll dig a can of worms and we'll go and catch us a string of Goggle-eyes or something like that and have a good friendly time.

Of course we could hike down to the Gulf and fight a big Tarpon or two or trot up North and grab a lot of Bass, but that isn't really fishin'—that's making a sort of a business trip out of it; what we want to do is to go some place where the birds sing and the soft wind blows just enough to make our corks bob 'round on the water a li'l bit and where we can sit in the sun and visit.

You know Henry, there's ways and ways of goin' fishin'; one way is to spend a lot of money and work hard—or have a few guides work hard for you while you fight black flies and try to get a lot of fish into a boat so you can catch the 9:17 train back home and see Bill Jones first thing in the morning about getting that nine carloads of steel he's got before the price goes up.

Then there's this way I'm telling you about where we dig a can of worms and just wander off by ourselves till we come to a place where we can catch Goggle-eyes in a nice clear li'l pond or lake where the lily pads make a shade for the fish and where there's a nice moss bed for them to fuss 'round in till they find the worm on our hook and yank the cork under for us all of a sudden just as we're watching a big Dragon-fly or a Swallow or something.

If you've never done that, Henry, you've missed half of life for there's a new thrill in it every time the cork goes under! Yes, sir! I've caught lot of fish in lots of places but when I want to go fishin' I want a can of worms, a good friend who isn't in a hurry to do something or somebody, and a nice quiet place where I can sit in the sun and visit with my friend while I watch the Dragon-flies and catch a mess of Goggle-eyes. That's fishin'!

Do you know, I've often wondered why these flying machine fellows don't have a fish pond handy where the Dragon-flies could come every day to catch flies and things, especially 'skeeters, the way they do, for every one of them is the very finest airplane ever and pretty near any flying man could learn a lot about flying by just watching them; but that's just a side issue—one of the li'l things that makes fishin' worth while and the friendly game it is.

I understand good John Burroughs (Peace be with him!) was a friend of yours; he no doubt showed you a good many things in Nature that most people don't see or know about for he knew the intimate side of Nature in the right way and he learned a good deal of that from fishing trips one time or another—just such trips as I'd like you to take with me after Goggle-eyes the way I'm telling you about now.

You see Henry, fishin' is just something to do, to keep busy at while you get acquainted with the Outdoors. Fishin' is an excuse, you might say, to go to the big, still, Outdoor Wilderness which may be miles and miles across or may be just some li'l pond in a quiet pasture lot where you can go and fish for Goggle-eyes; it isn't the size, or the place, or the kind of surroundings you know—it's the friendliness of it all, the lack of worry and the spirit of rest and good fellowship you get out of a fishin' trip that makes it so worth while.

Whether you catch fish or not is a side issue; of course we can catch enough for a nice li'l mess most anywhere and any time if we know how and if we don't we needn't worry for if we have to have a bite to eat, why we can get a mess of frog-legs or crawfish any where that we'd fish for Goggle-eyes and you know what the restaurants soak you for either of these tidbits when you buy 'em!

The point I make is this: It isn't all of fishin' just to fish. I know that has been said very many times before but it has been said only because it is true and because going fishin' with a man is the best way in the world to get acquainted with him and to really know him.

Down inside men are a good deal alike, they either ring true or they show a yellow streak; if you go fishin' with a man, you mighty soon get him placed.

If he's a real man you'll know it without any recommendation from any man; if he's yellow he can't hide it either and a li'l jog of a fishin' trip after Goggle-eyes will do just as much for tired nerves and get you just as far from business as a big rush trip that takes you a thousand miles away from home and costs a hat full of money.

I'd like to take this li'l fishin' trip with you, Henry, for two or three reasons.

First I'd like to be friendly with you as I am with everybody so we could talk about things that have no price marks tied to them but that are human and close to the heart and close to the ground.

Money is all right in its place but it doesn't mean any more than a yard stick does when it comes down to fundamental, foundational things; you know all this as well as I do—likely better, because your business has made a lot of money for you—all of which cuts no ice on a fishin' trip for Goggle-eyes because you are where money doesn't count then for you can't spend a cent while you are fishin' any more than you can pay the Ferryman when you cross the River Styx—and nobody ever yet has done that for there's no pocket in a shroud, you know, Henry.

You've made a great business success and a great li'l machine out of that "Tin Lizzie" of yours, Henry, and I'm glad of it in one way because I like to see a man do what he sets out to do and you've done just that in spite of all they've said about your car.

The more they call it a "Tin Lizzie" the more they'll buy because a thing (or a boy) has to be mighty popular to earn a nation wide nickname but when it does earn one it means that everybody is for it strong. Look at Roosevelt; he was probably the best loved and most representative American among us in spite of the fact that he was President and he's the only man who ever held that office that we all felt like calling "Teddy" just because he was one of our own crowd—Peace be his!

It's the same way with that li'l car of yours; they all make fun of it in public and then go and buy it and use it and it takes 'em there and brings 'em back—same way—and they like it.

It's because it does "take 'em there and bring 'em back" that I'm inviting you to come and go on this fishin' trip with me. You see I figure that you've made a pretty good, honest kind of a piece of merchandise or it wouldn't do what it does in the hands of the multitude—therefore, somewhere down inside, there's a Henry Ford I want to know, to get acquainted with and go fishin' with.

I want to know you well enough to holler over the back fence to you, "Yoo hoo! Henry! Gettcha fishin' pole 'n c'mon! I got a dandy canna worms! Less Go!" And then I want you to forget all about Henry Ford and the Ford car and come sit in the sun and fish for Goggle-eyes with me for the good o' your soul and the freckles you'll get on your nose like as not; if the business is still going when we get back, why all right; if not, what's the difference?

If you'll get into that state of mind and that friendly attitude toward the world, Henry, you'll find the world a brand new place, one that you never saw before and the most friendly, lovable place you can imagine. John Burroughs knew that world and he knew it well; it is a pity that more men don't know it well, too; for it is a philosopher's world, a place of vast peace and understanding where all things work themselves out and become a harmonious whole that is so well worth while as to overshadow even as big a business as making Ford cars and things.

When we understand that bigness of the world then we are ready to enjoy life every day and to get all there is out of it because we do understand and are ready to live and let live.

Just what this means I can illustrate with a true story of an experience that fell to my lot just a short time ago—two or three years ago this fall.

I went to see Billy Hofer, an old time Westerner known and beloved by a lot of other old timers who know, or have known of him, and his outdoor life and work in connection with game and bird preservation, stocking, etc. (Incidentally, Billy is the man who really brought the beaver back to the Adirondacks for one thing.)

He lives on a little ranch on Whidbey Island in Puget Sound now, thirty or forty miles from Seattle, where I drop around to see him once or twice a year so we can talk the world over and decide what ought to be done to regulate it.

I was there on one of these trips two or three days before the hunting season opened in the fall and Billy and I forgathered on his big front porch where we could sit in a rocking chair and hunt bear that once roamed the northern Rockies; it's as good a way to hunt bear as I know for it has all the thrills of the real thing and doesn't hurt the bear or the hunter.

During those few days we could see out over a little field or two that had been closed ground for several years—a little valley where the conditions were right for bird life and where Hungarian Partridges had been planted to stock the surrounding covers with the natural increase.

We saw a good many partridges flying or feeding there peacefully and we saw numbers of China Pheasants, also a planted stock, and numerous quail of the Bob White, Mountain and Valley varieties.

We crossed the little valley several times going and coming to the R. F. D. mail box up on the highway and we saw many birds on these trips also.

The little valley was a peaceful, well populated place that promised plenty of upland birds for the whole south end of the island and we, as old time outdoor men who knew the meaning of what we saw, were well pleased.

Then the season opened.

Beginning with sunrise, or somewhat before, you would think that active war had come to that valley—and it had!

But it wasn't the right kind of war, Henry, for it was a war of the strong against the helpless and it brought destruction, death, devastation and suffering to the valley.

I know; I saw it done. I saw the cruelty, the butchery, the wanton killing, the tragedy of death, wounds, suffering and terror—and I was helpless to lift a hand because the law gave the killers the legal right to kill.

They came—an army of them with dogs and guns—all day long that first day, and they swept that peaceful valley from end to end both ways and across; they shot, or shot at, every thing that moved, regardless of what or where it was; I saw men shoot with a shotgun at birds so far away that they could not have hit them with a rifle and I saw others shoot birds so close to the gun muzzle that they were blown to a mass of bloody pulp.

All day it went on—men and dogs and guns up and down and crosswise, back and forth like a vacuum cleaner until sundown put a stop to it; group after group came and went and we heard the guns going all around us all day the same way; it was hell for the birds, nothing less, and the only ones that escaped were a few that kept far enough away from all guns all day to live and some of these were wounded and died later as we found out from the signs we read in the next few days after the opening day—dead birds, cripples, such things as lived and suffered and finally died from starvation and wounds unattended.

The peaceful valley was left as desolate as a desert and it took only one day!

Do you know how this was possible? I'll show you and tell you in a minute or two.

Billy and I did not fire a gun; there was nothing left to shoot where there had been plenty before and we had no heart for shooting after what we had seen done that day even if there had been plenty left. I have not taken my gun from the case since and I never will again, it is altogether likely, for I am ashamed to admit that I am a member of this same tribe of white men who pulled off this killing; it wasn't done among men of my clan, Henry; we shot to kill and we played fair nor ever killed the breeding stock of anything. It wasn't done. I am ashamed of these men of today.

After this killing I concluded to go fishing and forget what I had seen so I went up the road to a trout brook that always had given a nice mess for an hour or so of fly casting.

I fished the brook from end to end and did not get a single rise—not even a fingerling came to my flies. That was strange. I went to another brook with the same result and to another—and another. I could not understand.

Wherever I went—all day long—I found only barren desolation—not only of waters but also of woods and fields; there was nothing left alive!

Now Henry get ready for a jolt, for it is coming.

I'd seen other parties hurrying up and down the roads all day—up and down highways and little back roads where you'd think an automobile could not possibly get in or get out.

Everywhere I went parties were fishing with all kinds of tackle in all kinds of places—and going on to the next place.

"Just a li'l fishin' jaunt near home."

Nobody stayed long in a place but the same place was fished over at least a dozen times a day and it was vacuum-cleaned to the last fin by parties who came and went on rubber tires!

I noticed that; it began to soak in; I watched and found evidence galore to back up the theory I had formed until at last it came home to my understanding that where an automobile could go there wild life was practically extinct even to the remote places that teemed with fish and game, before the day of gasoline.

And Henry, here's the rub—the gasoline car that I met with fish rods sticking out of all sides of it and on the fender was "the car that took you there and brought you back"—the Ford! Not one in fifty was any other kind! I kept note and count; I am telling you the truth.

I remembered that killing back there in the peaceful valley on the opening day of the hunting season when the army swooped down and wiped out the tribes of birds that were so plenty—and did it all in one day; then I remembered what Billy had remarked a dozen times that day as new parties unloaded and swept that valley with dog and gun.

Billy had said, time and again, "Well, here's another Ford car full of 'em! Ain't it Hell?" It was, and it had been all day long, a ceaseless stream of cars, all coming and going, all rushing up and rushing away; one party with a Ford car was worse than twenty parties in the old days before Fords "took you there and brought you back!" There could be no doubt of that.

Also there can be no side stepping of the indictment because the Ford is practically the only car used by the shooter and fisher of today who shoots through twenty covers or fishes twenty fishing grounds.

Why? Because you have made it cheap to operate, light of weight, powerful enough and fool-proof! In that you, Henry, have acquired success in a commercial way because you have produced an effective machine and you are the man who has reaped immense financial benefits from an immense business honestly built on a fair and square manufactured product. I am glad of that for you but, also, I am sorry for your success spells annihilation of many species of living things and tends to make a desert of the world because the wild things are swept from the face of the earth.

(Continued on page 550)

Fly Fishing *for the* Big Ones

By B. F. WILDER

THIS paper is written for beginners at fly fishing for black bass. Expert anglers will not waste time over it. It will contain nothing new to them.

Fly fishing is often termed an art or science and mystery wrapped about it, I don't know why. For the best returns it requires only attention to detail, and the angler who knows how to cast a reasonably long line, how to place a fly accurately and how to manage a hooked fish, has mastered the mechanics of the craft and has little more to learn. There are a few tricks, the practice of which seems to result in the taking of large bass instead of small ones, and it is of these I venture to write; but they are only tricks and there is nothing mysterious, scientific or artful about them.

Let us begin at the beginning, let us consider why bass strike fly rod lures at all. Many good anglers ascribe the action to a variety of reasons, among them being anger and even curiosity, but I believe it due to appetite. With a single exception, I think a strike depends entirely upon two things—hunger and fear. If the former is in ascendancy, the bass will strike; if the latter, they will not. It is the angler's task, then, to excite the one and abate the other.

Now, if a pool contains several bass, by right of might the large ones have first chance at anything edible that may happen to fall therein. Moreover, the big fellows require more food than do the small ones and so feed more frequently. These things are in the angler's favor.

But large bass know more than do small ones, for they are older and have gained wisdom by their years of experience. They distinguish between live and dead food, they recognize what circumstance favors successful pursuit of their prey, they are suspicious of all that does not look right and act naturally. And because of their frequent feeding, very large bass are usually glutted.

That is the case for and against the angler, and the conditions against him outweigh those in his favor. That is the reason why a beginner takes so few large bass on fly rod lures. But if the fish can be deceived completely, if the angler can make them believe that the lure is alive and edible, usually it will be taken by the largest bass in the pool. Speaking generally, the size of the bass raised is in proportion to the angler's ability.

In all cases deception is accomplished by imparting the appearance of life to the lure, and merely moving it about will not suffice for this. To deceive the wise "old he-ones" the lure must imitate closely the natural movements of the living food it represents. That is of supreme importance. And because the big fellows' appetites must be tempted, the lure should at least resemble the food the bass are then taking, but that is of far less consequence than imitation of natural movement.

To show the relative importance of the two, we shall consider bait casting with a dead minnow. Here we have exact resemblance; yes, and more, we have the thing itself. When cast and reeled in—that is, when a natural motion is imparted to the minnow—it takes bass well, as every fisherman knows. But try it without motion, try it still fishing. How well does a dead minnow take then?

Let us look at the matter from its other angle, let us examine that excellent trolling lure, the Wilson spoon. Here we have something which, without motion, does not resemble a bait fish at all. But when on its darting, twisting course through the water, it closely imitates the flight of a silver mullet; and when used where mullet abound, it's some lure.

Since imitation of natural motion is of so much consequence, it follows that to take large bass the angler must know the actions of the living creatures his lures represent. Furthermore, he must learn to make his lures imitate those actions and he must see to it that his lures are capable of that. It will necessitate some observation, and more careful selection than is now customary when buying tackle, but it is essential for success with the big fellows.

Early in the year, before the fly hatch is out, is the best time for the wet flies. Then the bass are deep down, feeding on the larvae of various insects, and so an underwater lure takes well. Because food is scarce at this season, the bass are ravenous and will at least inspect almost anything that moves; therefore, brightly colored flies are likely to be more attractive than those of sober pattern, simply because the fish can see them farther. Since areas of circles are proportionate to the squares of their diameters, a fly that can be seen at twice the distance at which another is apparent is visible to four times as many fish or, in other words, covers four times as much water at each cast. Thus, though it may not be as truly attractive as one of a more somber pattern, it may be more efficient because of its high visibility. Later on, when food becomes plentiful, flies which closely resemble real insects are likely to be the more successful, for in the midst of plenty big bass pick and choose very carefully.

As a general thing, the angler should follow the old rule and choose his patterns with deference to the weather, a bright fly for a dark day and vice versa. On bright warm days the waters swarm with larvae and the bass get plenty of food; so the pattern, usually a somber one, that most closely imitates the protective coloring of these insects is the one which does the business. But early in the season dull days are likely to be cold and on cold days the various larvae stay close at home. In consequence, the bass are short of food and take chances; therefore, a bright fly.

It seems almost unnecessary to say anything about the working of wet flies. As I have said before, the bass are feeding on larvae, and as these move about with erratic jerks and jumps, the angler cannot do better than to cast a long line, let his flies sink several inches and recover with little jerks, being at all times prepared to strike at the slightest tightening of the line. Between impulses, the flies should be permitted to sink again and care should be taken to work them slowly, say about four casts per minute. On very hot days or on quick water, they may with advantage be worked

"There are a few tricks in the taking of large ones instead of small ones."

higher up and faster, but most beginners work them entirely too fast. To take large bass the flies must closely imitate the actions of the larvae on which the bass are feeding. None of these go skittering about on the surface and the big fellows know it.

When the fly hatch is thoroughly out and the bass are feeding on the surface, the wet flies may be returned to the fly book for another year, for at this time the cork bugs are much more effective for large fish. Properly handled, in their season, the bugs will lead the wet flies two to one. But much depends upon the angler, for now the bass have plenty of food and big bass are extremely critical. They seem to know exactly how a floating insect acts.

If the angler is to enjoy the cork bug's greatest efficiency, he must know that, too, and it will be well for him to throw a good-sized fly or moth on quiet water and watch closely. He will note that the insect does not leap and skip over the surface nor does it even begin to struggle immediately. If it drops upon its back, it at once turns over and for some seconds lies motionless, as if adjusting itself to conditions. Then it tries to swim, but gains little or no headway. Its feeble efforts get it nowhere; if it advances at all, it does so very slowly. But its struggles make tiny ripples that advertise its presence; and if there is a reasonably hungry bass in the immediate vicinity, that fly vanishes in a burst of spray.

Now in that, there is a lesson on choosing cork bugs as well as on working them. To deceive large bass the lure must seem to be alive; and since a living insect never floats for long upon its back, of what value is a cork bug that won't float any other way? It's only a detail, true; but it's one of those details that can be weighed at the end of a day's fishing. Sometimes a large bass can be "jumped" (to be described later) with even a defective bug; but all bass prefer live food and very large bass will not touch anything else unless extremely hungry, so an angler who uses a bug that floats upon its back is very seriously handicapped.

With a well-tied bug, all that the angler has to do to get good fishing on flat calm water is to make his lure imitate the actions of the living insect. Let him shoot it out nicely and keep it quiet for a few seconds, when, if the light is right, he will see a bass appear and lie close, watching the lure. This is the critical period. If the bug is permitted to lie still, the bass will slowly sink from view; if it is jerked or moved quickly, the fish will vanish like a flash of light. But the gentlest possible motion imparted to the lure, just enough to cause it to make tiny rings on the smooth surface, is usually sufficient to tempt the wariest old fellow to take a chance. And an angler who has done this and has seen a great bass shoot into the air with the bug in his mouth is a convert to the cork bug.

In windy weather or on rapid streams, more motion must be given the lure. The angler must show it to the fish—like other things, it must be seen to be appreciated—but, except with pickerel and pike, the cork bug is a failure when skipped or even worked quickly. Real insects don't act that way, and the wise old bass appear to know quite as much about the habits of insects in water as do anglers. Maybe, they know more.

When making a choice of pattern the angler will do well to experiment a bit, keeping in mind the fact that it is good business to cover as much water as possible at each cast and that patterns of the highest visibility are seen at the greatest distances. If his first choice fails to take well, he should change to a pattern more closely resembling the coloring of the insects on which the bass are then feeding; but this pattern need not be exact, a general effect is all that is necessary. And in determining what the bass are eating, the flies to be seen floating in quantity on the water are nothing to judge by. They wouldn't be there if the bass were taking them.

After several warm nights in succession, the rough stones projecting from the surface of the water are often quite thickly covered with nocturnal insects which are apparently dazzled by the light of day. These insects, usually small moths, are often so nearly the color of the stones on which they lie that they cannot be seen save by close scrutiny; but the bass appear to know that they are there and gather in large numbers, probably to feed on the unfortunates that fall in. At such

"Fly fishing is often termed an art or science—"

times a cork bug, cast so as to strike a rock and bounce back upon the water, will be taken so quickly and savagely that a novice at the trick will often forget to set his hook. This is one method of "jumping" a bass, and it usually is remarkably successful.

Early in summer, in calm backwaters and swampy places, the dragon flies have a habit of lighting on small twigs or hovering close to the water, from time to time touching its surface lightly with their tails, and at such times bass feed upon them freely. Frequently one may see the water of some placid bayou cut white by the furiously feeding fish, and though the bass are then extremely wary, wonderful sport may be had by "jumping" them. This requires some nicety of both hand and eye, for false casts must be made to rouse the interest of the fish, but it is not a difficult trick to learn and the sport is magnificent. Often a bass will leap to meet the bug and the angler will sometimes set the hook while his fish is in the air.

"Nothing can equal the thrill of getting the big ones on a fly rod."

For this fishing a fly rod of good backbone is needed—a dry fly rod of about five ounces is excellent—a tapered line and leaders not less than six feet long and of good strength. The line should be slightly anointed with deer's tallow, to make it float, for it and the bug must be picked off the water with the minimum of fuss. Moreover, the angler must be enabled to set the hook with great rapidity, for the bass hold the lure for but a fraction of a second. For this fishing I prefer a rather small bug with a clear gray body and long black-and-white wings, but any bug somewhat resembling a dragon fly's coloring will take bass and lots of bass.

The beginner must learn how to cast his fly out close to the water, but without touching its surface, and make it seem to flicker and hover as does a real dragon fly. Two or three such false casts, over a spot where a large bass is seen feeding, are usually enough to excite the interest of the watching fish and the bug may then be permitted to drop lightly on the water. Often the strike is immediate, frequently before the lure touches the surface, and commonly it is very savage. If no immediate strike results, the bug must be kept perfectly still for perhaps five seconds, when the gentlest possible motion may be given it. But it must not be moved from where it lighted and its recovery must be made without disturbing the water. Bad casting or poor recovery will quiet an entire bayou, though the bass do not seem to mind the antics of a hooked fish.

No matter how skillfully the angler may offer wet flies or cork bugs, with these lures he can appeal only to appetite, and so sometimes he finds it impossible to persuade glutted bass to strike. But with the feather minnow, the action of which simulates injury, he excites an inherent instinct, the instinct to take instant advantage of injury, so with this lure he can tempt even satiated fish. Because it will aid the novice to grasp quickly the proper handling of the minnow, consideration will be given the theory for its extreme efficiency before taking up its season and method of working.

I think it safe to say that all predatory creatures, from the highest to the lowest, possess a highly developed instinct to prey upon the hurt and helpless; also, that they recognize immediately the distinctive marks of "easy game." In man this instinct has been veneered with civilization's precepts, yet it persists. Let a flock of birds fly by or a school of fish swim into view, and one's eye rests instantly on those that do not fly or swim as do the others. If there be but one injured or defective in all that flock or school, the observer sees that one. He may have no intention of catching that bird or fish, yet his instinct to mark injury makes him single it out to the exclusion of all others.

In fish this instinct is very strong. If a hooked barracuda shows signs of exhaustion, the school will turn and rend it; if a tarpon bleeds ever so slightly, shark will follow swiftly on the blood trail. Gray snappers, though they pay no attention to vigorous whitebait, feed furiously on injured ones; black bass take hurt bait fish in preference to those sound and strong.

Now, in all predatory creatures, this instinct is so potent that at times it obscures all other governing impulses; and when that occurs the spoiler is often spoiled. The "green goods" man finds it easy to trim his customers because their common sense is obscured by eagerness to prey upon their fellows. The "sick engineer" game thrives because

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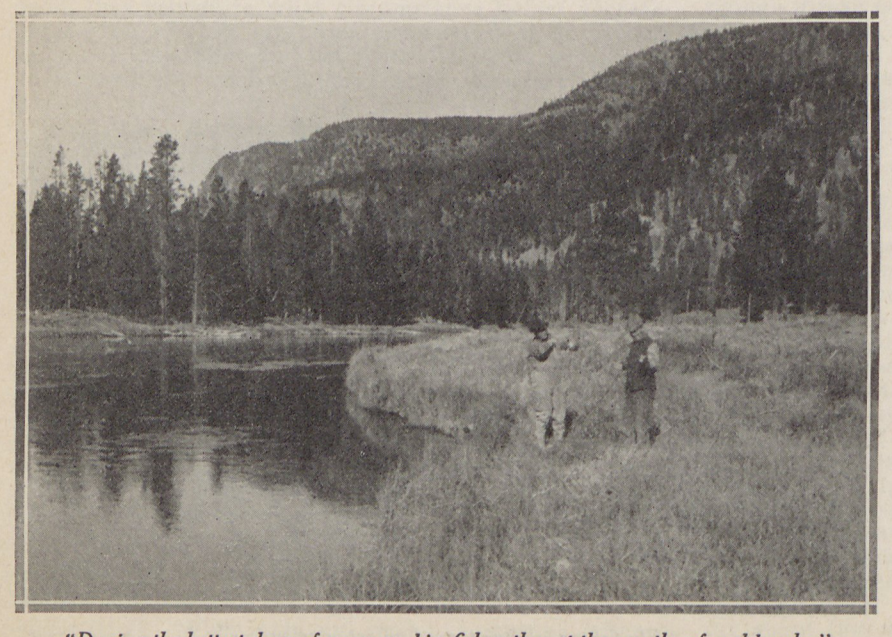


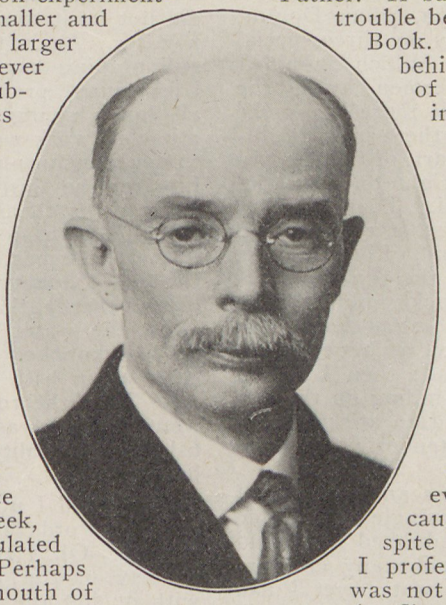
"During the hottest days of summer, big fish gather at the mouths of cool brooks."

The Conquering of Old One-Fin

By O. W. SMITH

Being a tale in which the Dry-Fly proved too much for a Highly Educated Small-Mouth

THIS is the tale of a bass, not the tail of a bass. The tail of a bass is the story of one that got away, but the tale of a bass is the story of one that failed to escape. Frankly, when it comes to fishing for bass with dry-flies there are more tails than tales. Just the same I began experimenting with the floating fuzzie wuzzies and bronze-backs some years ago. I wrote, I believe, the first article to appear in print on the subject, though I can't remember that it created any furor at the time, called forth any comment favorable or otherwise. I imagine those who bothered to read it thought the writer was a wee bit daft and let it go at that. Just the same I kept on experimenting with floating flies, ever selecting smaller and smaller patterns, winning larger and larger success. I can't now remember that I ever prepared another article upon the subject, and I want the reader whose eyes happen to fall upon this page to remember this is not a "how-to" article, but the plain and unvarnished account of the undoing of old One-Fin. Of course, if the reader picks up here and there a wee bit of information of greater or less worth, I can't help that; however, this is a story, just a story and nothing more. Having thus raked the weeds from the surface of the water, as it were, I am ready for the preliminary cast.



The Author.

"Old One-Fin," as we called him, was an institution, a fixture. No one knew when he took up his residence in the pool below the mouth of the creek, with its maze of roots, its accumulated debris of many a springtime flood. Perhaps he was born on the shallows at the mouth of the creek itself—for ever since man can remember bass have nested there—growing to fishhood in and about the pool below, fighting his battles with the lad's worm-baited hook and with other fishes. We know not. Neither do we know what accident it was that deprived him of the posterior portion of his dorsal fin, cutting it away sheer and clean, reminding one of the story of the scientific christening of the small-mouth, **Micropterus,** "small-fin," because the specimen sent to Paris was sadly mutilated. Apparently old One-Fin did not miss that portion of his dorsal sail which was lacking. I for one am willing to come forward and testify to his swimming ability, and as for those acrobatic stunts for which both species of bass are famous, he was pastmaster and perhaps teacher.

Let's see, it was little Billie Bunn, "Bunny Bill," we called him, who first identified One-Fin and gave him the name. As I remember, Bunny was fishing for wall-eyes at the mouth of the creek one evening, using live-minnows of course, for he always has been a bait-fisherman, when he hooked a bass "a yard long" and of unbelievable weight, which smashed his rod, broke his line and escaped. Bunny claimed he caught a good view of the old fellow as he leaped clear of the water close in shore, fins "all set like spread sails," and that the back-fin was only half as long as it should have been, clearly showing that sometime the fish had met with a serious accident. Of course we laughed at Bunny and his "one-finned" bass, but just the same we all made sundry and surreptitious visits to the pool, casting plugs, bass-bugs, flies or live-bait according to our predilections and notions as to what might prove the most winning. No one ever admitted for an instant that he believed Bunny's tale, much less ever cast a lure or bait into the Lee Creek Pool in hopes of connecting with a bass which wore but half a fin upon his back.

The Presbyterian preacher was the next man to appear with a wonderful story of a fish so large there was no holding him, a fish with only a few spines along his back where the dorsal fin should have been. Asked to show us how long the fish was, the domine spread his hands wide apart in a comprehensive gesture as though he were depicting the all inclusive love of the Great Father. If bass grew so large one would have no trouble believing that whale story in the Good Book. Of course we grinned at one another behind his reverence's back, though out of respect for the cloth, we looked duly impressed and credulous. It never is wise to doubt a predestinationist, he has the underhold in an argument.

Time slipped by, the days crept into the weeks and the weeks slid into the months, winter came on and fishing was over. During the season at least a dozen men and boys admitted to trying conclusions with old One-Fin, for he had become an institution, a part of the ichthyic life of our set, something to argue about, dream about and scheme over. Though I had run the gamut of my dry-fly book through and back, resorting to other lures and even live-bait, I had never so much as caught a glimpse of the "whale," and in spite of the many stories to the contrary I professed agnosticism—when the preacher was not around. I spent the winter making dry-flies of wonderful and fearful design just the same, dreaming dreams and seeing visions. When the next season rolled around I had three dry-flies, tied to No. 8 hooks, which everyone knows is small for bass, that I knew must tickle his fancy.

Opening Day arrived and though I arose betimes and bent my feet in the direction of Lee Creek Pool long before daylight, I found eight other enthusiastic bass-fans, but agnostics so far as One-Fin was concerned, lined up along the bank. As the Frenchman said, "It was to laugh." Of course nothing was done that morning, and as it fell out not for several days. Again it was "Bunny Bill" who reported the bass still in the pool, a matter which I doubted, my position being buttressed by the Presbyterian clergyman, a little matter which gave me more concern than satisfaction; I knew he, like myself, deep down in the depths of his secretive heart believed in the existence of One-Fin and hoped to try conclusions. So though we talked loudly and convincingly about the absurdity of believing in the presence of the fish, we more than once met rather shamefacedly on the banks of Lee Creek Pool, **always fishing for wall-eyes.**

I did not venture my new dry-flies until atmosphere and water conditions were just right, indeed I did not cast a dry-fly on the surface of the pool at all until I had taken several bass from other pools, for I am the only crank in our little angling circle "fool enough" to use dry-flies at all for bass. So I waited, knowing full well interest in the fish would wane with the passing

of the days, and that the time would come when I could have the pool to myself, conditions right, everything right. Nor was I disappointed.

It was along towards the first of July, no, it was the first day of July, I remember now. With my 5½ ounce, 8½ foot dry-fly rod—a too light tool for the work, I am willing to admit—I set forth for the pool along about sundown. I have discovered that in bright weather the best hours for the dry-fly are from a few minutes before sundown until darkness sets in, making casting an impossibility, even if the fish could see the lures. Of course there are hazy, mizzling days when one can cast the floaters with impunity anywhere, sure if bass are about and the rodster understands their habits as well as how to handle dry-flies, he will get fish a-plenty. Let me add right here, however, that dry-flies will not win as many fish as will the feather-minnows, bass-bugs, or regulation fuzzy-wuzzies, but there is rare sport and real satisfaction in taking fish on dry-flies.

Arrived at the pool I paused well back from the water's edge to spy out the land. Yes, the coast was clear, no anglers in sight anywhere. I had the place to myself. That was good. I sat down to assemble my light rod, test my leader, put everything in ship-shape. I opened my fly-box and studied its contents. There were the regular flies, Royal Coachman, Silver Doctor, Jock Scott and Par. Bell; and there lay my three special creations, all untried and unknown. Which should I use? Only dyed-in-the-wool fly-fishermen know the momentousness of the moment. While there is not the danger of "putting down" a bass that there is of frightening a trout, still it is never the part of wisdom to employ too many flies. Always the right one is right, the wrong one wrong. So I studied. There lay my three new creations. I lifted the first, a combination of black, red and silver tinsel; the second, of blue, brown, yellow and purple, an impossible fly; the third, a body alternately gold and silver tinsel, hackle blue, wings claret, a surprisingly taking color combination. Still I was in a quandary. I tossed a nickel as between the first two, the lot falling on the second; then I tossed between the second and third, the lot falling on the latter. I was perfectly satisfied, for I had an affection for the beautiful creation. I bent it on tenderly, but with fingers that trembled.

Who will ever understand the whims and notions of an angler? Now, there was not a single reasonable reason why the Silver and Gold, as I dubbed it, should win out, it was so far as I knew unlike any creature flying in the air or swimming in the water, yet I had faith to believe that it was a winner. Of course it will be objected that it was not a real dry-fly because it did not resemble a natural insect. Well, what insect does the Par. Bell or Silver Doctor resemble? Did you ever see a Scarlet Ibis or Jock Scott in Nature? Now, **will** you keep still! That my Silver and Gold was a real dry-fly, I reassert, built to float upon the surface and treated with paraffin and oil to aid in that direction.

Ready at last, I glanced over my outfit for the steenth time,—rod, reel, tapered line and tapered leader, my eyes resting last and most lovingly upon the Silver and Gold. It was a pregnant moment. The zero hour. All the world waited with hushed breath for the cast. Off somewhere to my left a song sparrow lifted its silvery voice in,—"Maids, maids, maids, put-your-tea-kettle-on." I grinned appreciatively. I took it as a good omen. Prone, in that position the boys graphically but inelegantly describe as "belly-flop," I crawled down to within casting distance of the water and paused behind a bunch of goldenrod not yet in bloom. I waited, studying the pool.

The wise dry-fly enthusiast who hopes to take bronzebacks is never in a hurry when it comes to casting. I waited for a rise, with small hopes that one would take place, yet hoping intensely nevertheless. If prayer is "the sincere desire of the soul, uttered or unexpressed," I prayed mightily. I never admitted to myself that I looked for a rise, told myself emphatically that I did not expect to see a wrinkle on the surface of the pool other than that made by the current, yet watched for a fish with an intensity that was painful. How an angler lies to himself and takes comfort in the lying!

I lay there for what seemed an age, until I grew old, gray, palsied, decrepit, expecting the grim calvaryman upon the white horse to summon my body to the dust of the fathers; though actually less than five minutes dragged by, for so my wrist-watch informed me and I could not doubt it. I noticed a gauzy winged dragonfly darting here and there along the shore, hawking for mosquitoes no doubt, and wondered whether he was having better success hunting than I was fishing. Suddenly he darted out over the water, presumably in pursuit of an elusive mosquito, swung low, then— Instantly, so suddenly I nearly shouted in astonishment, a great bass shot into the air, its wonderful body poised for an instant, silhouetted for the briefest fraction of a second against the darkening surface of the water, then plunged with a mighty splash, the sound of which struck my brain like the blow of a sledge-hammer. I broke out in profuse sweat. Such a fish! **Such a fish!** Remember I had never seen One-Fin, and that it was he the mutilated dorsal clearly indicated.

I waited for the current to iron out the evidences of the rise, waited until sure the bass had had ample time to swallow his capture, for that he caught the darning-needle I was certain; then I sent the little fly, twisting, undulating, out over the surface of the water. No, I did not let it **touch** the water. I was coaxing One-Fin, you see. Again the Silver and Gold made the journey, still nothing happened. "Three is my lucky number," I murmured, preparing to make the cast; all uncertainty, all doubt having vanished, I was in a mood to perform miracles, work wonders. I knew, just knew that I was to try conclusions with One-Fin. Out shot the little lure for the third time. "Swing low, sweet chariot," I sung to myself as the glowing bit of color S-d through the air, down, down, until it almost touched the water. Came the expected, the attack I had been waiting for, the one I **knew** would take place. Of course One-Fin missed the fly, that was to be expected, but I let it drop upon the water, trusting that he would believe that he had knocked it down; nor was I disappointed, he came again with a rush and certainty that was nuts to me. The lithe rod sprang to meet the attack, the barb went home, I was in old One-Fin at last. The mythical fish was a reality, whether or not I won out in the battle.

How shall I undertake to describe the fight? Words are but words after all, wholly inadequate, not living enough. Oh, I know all about the man who pleads the poverty of the English language, being unacquainted with it; but the fool who said that never undertook to describe the fight a well conditioned, angry and terrorized bass puts up. That master juggler with words, Gene Stratton-Porter, tried her hand at it in "At the Foot of the Rainbow," failing miserably. If Mrs. Porter failed, who am I to undertake the task? Just think of your most thrilling ichthyic contest, recollect the best description of such a struggle you have ever read, multiply the one by the other and you will have the preface to my battle with old "One-Fin."

Forth and back raced the monster, sometimes deep down in the water, again with his mutilated dorsal just showing above the surface. Once, twice, three times, **four times,** he leaped in rapid succession, the water raining in a silvery shower from his gleaming golden sides. The little rod, product of a master craftsman, stood the shocks well, though again and again I trembled for its integrity. I could not spare it though it hurt me cruelly to abuse it so; but as between the rod and the bass there was no question, however, I remembered always that if the rod broke the fish would escape.

An hour sped, though that painfully slow wrist-watch of mine said but five minutes had loitered by, and I fancied my antagonist was weakening, though I dared not admit it even to myself. Then he changed his tactics, going to the bottom and "boring" like a salmon, nosing the little hook against the stones, I presume. I reeled down and pulled straight up, having utmost confidence in line, leader and hook. He could not stand the pressure, but came to the surface in an attempted leap that went off half cocked. I yelled in delight, he was weakening! To my surprise I found myself standing in the

mouth of the creek, waist-deep in the water, though how I got out there I could not for the life of me tell.

Ten minutes, fifteen minutes dragged by on leaden feet, no "wings of time" about them at all. The fish was about all in,—the rushes he made, short and half-hearted, the soundings brief and actionless: the leaps abortive and useless. 'Round and 'round he went, in gradually lessening circles. Then, glorious moment, he floated on his side, grayish-white belly showing, feebly "kicking," though his mutilated dorsal fin was still upright, the spirit of him not vanquished though his strength was overcome. I reached for my net,—then, shades of the Prioress of St. Albans and of Izaak Walton, no net hung at my belt, I had forgotten it!

"Let me offer assistance," casually remarked a calm, cultured and matter-of-fact voice, and that Presbyterian domine splashed out beside me, his landing-net deeply submerged.

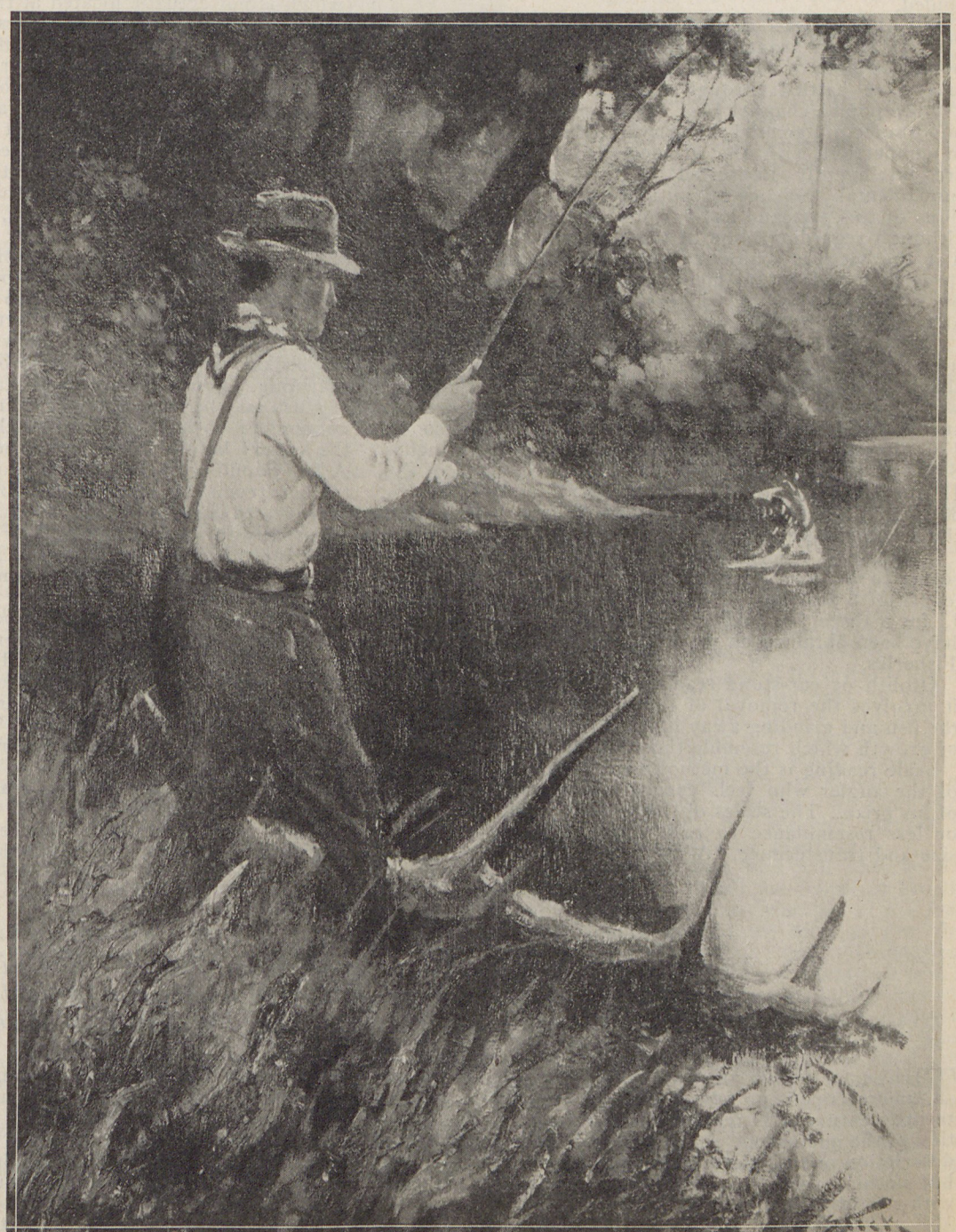
Holding the net so that its bag floated down with the current, as one who had done the thing a thousand times, he waited for me to bring the fish around, which I did, releasing the tension on the line at the proper instant so that One-Fin turned head on and entered into the hoop properly. Side by side we waded to the shore. At the instant I loved that Presbyterian domine devoutly, he could have had anything I possessed, like Esther of old, unto half my kingdom, and I am a Congregationalist. But what is a church between fishermen? I have a new version of the Good Samaritan, the man who appears with a landing-net at the crucial moment. What? Well, we spread that fish out on the grass, we gloated over him, the domine as much as though he had caught him himself. A small-mouth that measured exactly 23 1/5 inches long, while the girth was 16 inches. The record so far as I know, being 24⅜ length; girth 17¾. There have been some big moments in my life, some few honors have come to me; but I honestly think that was without exception my most triumphant hour. The stars that had come out sang together close over my head. The domine and I walked uptown together, as he expressed it, to "show off." Just before we hit the sidewalk, he remarked, "Well, seeing you are a good deacon in your church I will never make mention of the language you were using when I came upon you."

"Language," I stammered, "language!"

"Yes," he answered, "real he-man language, though perhaps I was mistaken and you were supplicating High Heaven for aid."

I wonder what I said!

> *"I thank God for the great gift of fly fishing."*
>
> FRANCIS FRANCIS,
> 1867



"Once, twice, three times, four times he leaped in rapid succession—"

Zane Grey's Sea Angling Page

The Ages of Fish

By SWITCH REEL

Mr. Robert H. Corson, who uses the pen name of "Switch Reel," is a well known authority on oceanography and has recently been made an honorary member of the British Sea Anglers' Society, which is the highest honor in their power to confer.

YOUR horseman is greatly interested in the age of his stock. Your hunter talks glibly about the two-year-old buck which fell to his rifle and he counts the points on the antlers of the old he-one to estimate the length of time his fate has been eluded.

But the angler's curiosity is satisfied by mere size. That an 18 inch trout may be an older fish than a twenty pound salmon, or that a twenty pound Kingfish or barb may have battled through more stormy winters than a forty pound channel bass rarely occurs to him. The importance of age, and the arrival of the fish at maturity, in connection with the problems confronting all who are intelligently interested in fish conservation, are fundamental. Science is cautious in handling investigations of this sort and has various methods of deduction, although regarding none of them as wholly satisfactory. Yet the view is expressed that a combination of the three best understood methods, statistical, otolith reading and scale reading, will eventually disclose a reasonable basis for hypothesis.

The statistical method consists in taking length measurements of a large number of specimens and tabulating them to centimeters or to quarter inches. Thereupon it will be found that the lengths disclose nodes around such lengths as 7 inches, 10½, 13, 15, 16½ and so on. For example, there may be six specimens of six inches, 8 of 6¼, 12 of 6½, 20 of 6¾, 25 of 7, 20 of 7¼, 15 of 7½, 11 of 7¾, 6 of 8, 3 of 8½, 6 of 8¾, 8 of 9, 15 of 9¾, 30 of 10½, then a falling off to the 12 inch length when the numbers swell again to the node at 13 inches, etc.

Upon such records the assumption is made, and it seems to be well founded that 7 inches is the average length of a yearling, 10½ inches for a two year old, and 13 for a three year old. These particular measurements have been obtained on weak fish by the U. S. Bureau of Fisheries.

Otolith or ear-stone reading is somewhat difficult, as it involves the removal of the otolith from the head of the fish and grinding away half of it to disclose the rings of growth which resemble those in the fibre of a tree.

Scale reading is the method most adapted to the needs of the angler who feels curiosity in respect to the age of his prize. The scales of the various species bear more or less resemblance to each other, differing mainly in size and translucence. A rough method of examination may be followed by using a strong pocket magnifying glass and two strips of glass an inch or less in width or perhaps two inches long in which to hold the scale flat. Under the glass the scales of the striped bass and the weak fish will be found divided from the "center" (which is not actually located at the center of the scale) into four distinct sections by lines radiating to the four corners. These lines separate different designs in the build of the scale from each other. There are three designs of build, one at the top, another in the lower sector, and the third in the right and left hand sectors. Circling the "center" of a perfect scale we find distinct lines somewhat regularly arranged clear to the edges. A close examination will show that these lines group themselves in such a manner that they appear to be built up in faintly distinct layers, each layer representing a period of good feeding and growth. At the edges of the layers there is somewhat of a constriction of the circular lines representing a period of poor feeding and arrested growth corresponding to man's winter.

After the second, third or fourth layer will be found a somewhat narrow portion in which the circling lines are broken irregularly. This is believed to represent a spawning. Thus the successive stages in the life history of a fish may be traced, its age estimated, and the chances counted of its having added to the finny population of the waters before falling a victim to the angler's lure. A 9½ pound weak fish which took my mullet last September seems to have been about ten years old and to have spawned five or six times. The mullet bait was apparently in its first year. A 47 pound black drum of New Inlet, New Jersey, taken by Mr. W. A. Leavitt, Jr., in August, 1922, looks like a nine year old fish which had spawned four times.

Many scales will be found imperfect. Injuries occur, scales are torn or cast off and replacement scales are grown. These can be recognized by an area of greater or less extent about the center which displays no circling lines, but instead, a jumble of curls or twists which do not show the usual layer effect. These scales are of no use in determining age, but by reading them from the edge toward the center until the layer effect disappears, the number of years elapsing since the injury occurred may be estimated.

All of which should be interesting material for the angler in speculation and discussion.

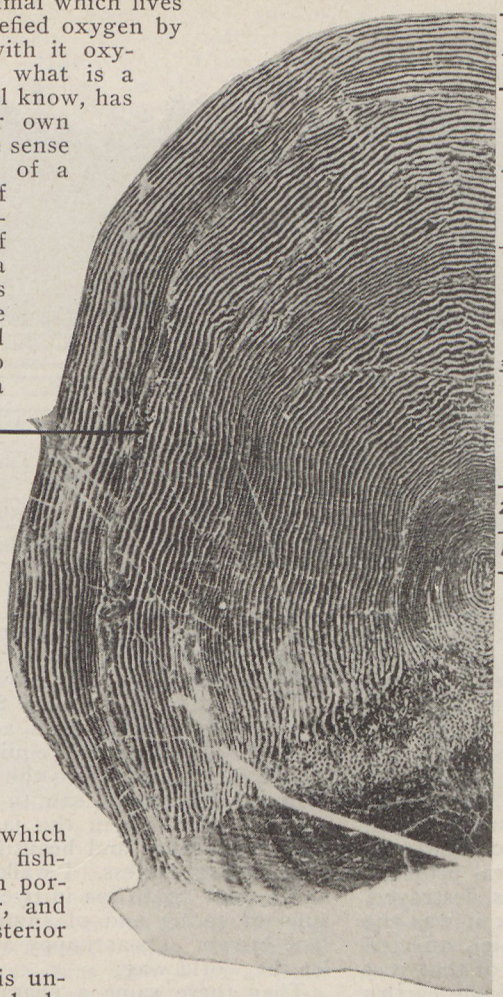
An article on Fish-Scales sent us by Mr. R. B. Marston, Editor Fishing Gazette, London. This is a subject of intense and fascinating interest and should be more generally studied by American anglers.

THE examination of fish-scales with the aid of the microscope is no new study. So far back as the sixteenth century it is recorded that soon after the invention of the microscope a man named Borells wrote a brief description of the microscopic appearance of a fish-scale, but nothing seems to have been done in this direction with regard to salmon and trout until recent times, when Messrs. Calderwood and Johnston, of the Scottish Fishery Board, Mr. J. Arthur Hutton, so well known for his excellent work in the restoration of the River Wye to the position of a first-class salmon river, and others took the matter up, and by a systematic series of research experiments conducted in parts of Scotland obtained such a valuable insight into the life and habits of the salmon as to make the study of their scales a most interesting and important work, inasmuch as by this study the whole life and habits of a salmon can be identified.

This research work has been the means of upsetting many theories formerly held, and should be the groundwork for future legislation in restoring our rivers to

"Fish and Game Cannot Vote"—Judge J. M. Dickinson

their former productiveness, and by this means adding to the food of our country. In considering fish-scales let us first of all try and get a good definition of a fish—surely it is a vertebrate animal which lives in water and breathes liquefied oxygen by means of its gills, wherewith it oxygenates its blood. Then, what is a scale? This word, as we all know, has different meanings in our own language. We use it in the sense of climbing, in the sense of a balance, in the sense of harmonic or musical proportion, and in the sense of the outer covering of a fish; but in all its various applications it seems to be derived from a Saxon word signifying to divide — so that the scale of a fish is a divided thing, a part of a whole.



A scale of a fish may be described as a little thin transparent plate, and upon this plate is engraved, so to speak, the whole history of the fish—more particularly of the salmon and trout. These scales are embedded in little pockets of the skin of the fish—so far as regards two-thirds of the scale—the remaining one-third being the exposed portion, which is what you see on the fishmonger's slab. The hidden portion is called the anterior, and the exposed portion the posterior part of the scale.

The use of these scales is undoubtedly to preserve the body of the fish from the attacks of the numerous parasites which infest salt water, and in order to do this effectually, and to make what a workman employed on slating a roof of your house would call "a tight job," these scales overlap one another—just like the tiles of a house. Now, underneath the scale of a salmon there lies that beautiful silvery membrane, or skin, which makes its appearance so attractive as it is exposed on the slab. This silvery membrane has the power of reflection, as a looking-glass, which is very valuable to the fish as it lies on the bottom of a pool in the river, for it reflects the color of the surroundings, such as rocks, etc., and so disguises the appearance of the fish from its enemies. Speaking from my own experience, it is by no means easy to detect a salmon lying at the bottom of a river unless it turns its silvery side up towards the rays of light.

Now in order to understand the history of the fish as stamped, so to speak, upon its scale it is necessary that the student should have some knowledge of the habits of that fish, for in the case of the salmon, which passes part of its life in fresh water and part in salt water, these changes of condition are so well marked on its scale as to enable anyone who has had some little experience in the study of fish-scales to tell with accuracy how many years the fish has passed in fresh and how many years it has passed in salt water—how many winters it has passed in the sea—and, more important than all, whether it has spawned and how many times.

For the benefit of those who have no intimate ideas as to the average life and habits of a salmon let me briefly give a short description.

Scale of female Steelhead. 31.5 inches in length, 12.5 pounds in weight. Caught in Scott's Creek, Santa Cruz Co., California.
Photograph by courtesy of Mr. Henry O'Malley, U. S. Commissioner of Fisheries.

Salmon, as most people know, are anadromous. They approach our coasts from the sea at certain times of the year to go up our rivers for the purpose of propagating their species, and it is a remarkable thing that whereas the salmon has to seek the fresh water of our rivers for depositing and hatching their ova, for the reason that salt water would destroy the vitality of the eggs of this fish, so the ordinary freshwater eel found in our rivers is obliged to go down to the sea to deposit its spawn in the deepest portions of the ocean.

To return to salmon, the ova are deposited in the beds of rivers where water flows with rapidity, and these spawning beds are called "redds." After some weeks hatching commences, and for a period of two years the young fish so hatched remain in the fresh water of the river, at the end of which term they are called "smolts." This portion of the fish's life is well marked upon the scale.

At the end of the two years the smolt by natural instinct proceeds down the estuary of the river, and goes straight out to sea. This is called the migration of the smolt, and by experiments on the River Tay it is found that these smolts congregate like a flock of sheep, and make their migration to salt water in big shoals. Some return the following year, in most cases to the river where they were hatched. Others come back in the second year after migration, whilst others remain in the sea for a still further period, until the spawning instinct compels them to visit our shores and ascend our rivers for the purpose of propagation.

Here it may be well to remind ourselves that it is for the one purpose of keeping up their race that salmon come to our shores at all, and we are apt to consider that we know all about the life of a salmon from these periodical visits. The question has often been asked, "How long do salmon live?" It is quite impossible to answer this question with certainty, inasmuch as we only know the salmon during its fertile days. What becomes of a salmon after the days of its fertility are exhausted? No one knows—it may still exist in the sea for many years after leaving our shores, and grow to much larger dimensions than we are accustomed to; so that because we only know it, at the most, as an eight-year-old fish, there is no reason why it should not exceed this limit by a number of years. Now all these different stages in a salmon's life are well marked on the scale of a fish in the following manner:—

With the aid of a good lens you will observe first of all a center, which we will call the center of growth, formed, let me say, in the very early stages of the fish's life. Round this center are formed lines of growth—just according to the growth of the fish. Mr. Malloch, in his book on the salmon, says that it makes sixteen of these lines of growth in the course of twelve months. Just as a tree makes one ring for each year of growth, so the salmon makes sixteen. Now, with all respect for Mr. Malloch's assertion, I am inclined to differ with him. My experience teaches me that a salmon during the first year of its sojourn in the salt water makes more like twenty lines of growth and more, owing to voracious feeding; and afterwards the lines of growth diminish in number as the fish grows older. It is the same with sea-fish. These lines of growth in the river life of the fish appear to be very close together for, say, a period of two years—when food is scarce in the river

(Continued on page 566)

Trouble *on the* Atlantic

By
FRANK STICK

Photo by Dave Kennedy

"I think it was the damage done to my lakes and streams that affected me most."

IT was not so many years ago that I packed up my rods and reels and guns, and setter pups, and reversing Horace Greeley's advice, I traveled eastward and settled with my family on the Atlantic coast. I had lived to see my favorite fishing waters of the west and middle west turned into veritable cesspools and vile smelling streams of poisonous matter. I had lived to see streams obstructed and turned from their natural courses to form irrigation projects, which usually failed, and I had seen vast territories, where once the wild fowl congregated, drained to form agricultural projects, which also failed. I had seen virgin forests destroyed, with no thought to the future. But I think it was the damage done to my lakes and streams, which affected me most, and so, when I stood on the shore of that vast body of water, which covers seven-tenths of the earth's surface, I said to myself, "Here is a fish pond which man's greed can never harm; here is a man-sized proposition which will give sport and recreation to the sons of men, when fresh water fish exist only in our memories."

"My hooks became imbedded in the jaws of man-sized fishes of strange and beautiful construction."

And so I became the owner of various seven and eight, and ten and eleven foot rods of great strength and resiliency, with reels and other fixings to match, such as constitute the equipment of your sea angler. And I cast my line into the ocean, and the gods smiled upon my efforts and saw to it that my man-sized hooks became imbedded in the jaws of numerous man-sized fishes of strange and beautiful construction, and of unbelievable gameness. I walked in the clean yellow sand, and I went far to sea in twenty-five-foot dories, and the suns of spring and of summer and of fall burned my face brown. I was happy and content, and satisfied to let the world wag.

Then there came a change. The clean yellow sand became foul with sticky, tarry masses, until it became unsafe to assume the favorite posture of the surfman. Famous fishing points, which in the past had never failed to yield good catches, became fishless, and we found it necessary to fare farther south each season. Some of my friends, who had been ardent devotees to the big stick of the surfman, and to the little stick of the bayman, and who found it impossible to leave their business for the several days necessary to reach more favorable fishing grounds, disposed of their outfits, and purchased bags of short sticks, equipped with ugly knobs, and spent their spare time venting their spite and disappointment on little white balls, which they pursued over hill and dale. Others, more strenuous, took up tennis, and there was a movement on foot to turn our club house into the headquarters for a glee club. True it was that those of us who stuck to the game have been able to make good catches of blues and striped bass around the inlets, and the real hardy salts among us, whose stomachs are strong enough to stand the pitching of a dory in the heavy seas, are apt to be encountered fifteen or twenty miles offshore, finding plenty of excitement with the albacore, the bonita and tuna.

But the case of the business man, who is limited to a Saturday afternoon or a Sunday's fishing, is a serious matter. If he resides in one of the great industrial centers of the east, his sport of rod and reel has either disappeared entirely, or is practically nil.

Now, I am not an alarmist. In fact, being a dyed-in-the-wool, so to speak, fisherman, it follows that I am a confirmed optimist, and I am usually able to visualize a glint of sunshine in the most dismal prospect. And, notwithstanding the fact that our fishing, along the northern section of the Atlantic coast, has been growing steadily poorer and poorer, I am stead-

fast in the belief that the harm which has been done to our coastal waters is not irreparable, and I am confident that I will yet live to see the causes which have worked this tremendous harm to the sportsmen and to the commercial fisheries eradicated, and our marine life brought back to a condition of normalcy. I am confident that this result will be attained, because I see, at last, an end to sporadic and ill-advised attempts to influence legislation in our behalf, and I see in their stead a concerted, national movement, backed by every sincere outdoor man and woman in America.

I am not one of those who contend that the commercial fisheries are responsible for the disappearance of those fish which once visited our shores in unbelievable numbers, and yet I do believe that these fisheries, particularly where they apply to anadromous fishes, should be under scientific control. I believe also that netting should be prohibited within a radius of several miles of the mouths of inlets. I am not sold entirely to the theory that the visitation of migratory fishes to our shores are under the absolute control of water temperatures, though it is undoubtedly true that water temperature is an important factor and has an appreciable influence on many species. It is unquestionably true that old ocean will sustain her average, and will, either annually, or in cycles of varying lengths of time, produce a practically equal number of fish, during a period of several years, and so far as they affect the pelagic fishes, the commercial fisheries are unable to lessen the abundance of a single species, to any appreciable extent. No single species of salt water fish has ever been exterminated by man, and none ever will be, wild eyed extremists to the contrary notwithstanding. And yet, from the standpoint of the fisherman who resides in our great commercial centers, they might as well be exterminated, for, so far as it concerns him, the sea is but a barren waste of waters.

"Went far to sea in 25 ft. dories."

There is one cause, and one cause only, for the tremendous falling off in the numbers of food and game fishes, along the northern sections of our coast. That cause is pollution by tar, oil, waste from industrial plants, and sewage. What is its effect? In the immediate vicinity of this discharge of poisonous matter marine life is killed instantly. At greater distances it works more slowly, and yet so delicate is the organism of these creatures which inhabit the sea that the effect is such as to destroy, or to drive the fishes away from their natural feeding territory, even though the solution of poisonous matter is almost infinitesimal. This pollution destroys also that minute plankton life, on which the embryonic fish exists, and on which several varieties of mature fish are at least partly dependent. Even to a greater extent than the fishes themselves, are the shell fish and crustaceans affected by pollution. And this latter fact is, I believe, responsible for the disappearance, from their one time favorite haunts, of many species of fish which feed wholly, or in part, on these shell fish.

Time was when that section of our northern coast extending from Long Island on the north, to the Shrewsbury river, on the south, was as prolific of fish life as any stretch of the Atlantic seaboard. This region now is the center of pollution, and the once clear and sparkling waters are now so befouled that none but the coarsest and lowest forms of marine life are able to exist. The striped bass, the shad, the bluefish and the weakfish, these are practically unknown, these many years. The same condition to a lesser degree is found along the entire New England coast, and to a still lesser degree down the shores of New Jersey and Delaware. And yet, when we reach the Carolinas, Georgia, and in particular, Florida, though commercial fishing is there far more intensive than in our northern section, we find as great an abundance of marine fish life as existed fifty or a hundred years ago. I speak advisedly. This last season was one of the greatest ever known in the records of Florida fisheries. Bluefish and kingfish were more abundant than for years, and it was a phenomenal year for sailfish, bonefish, mackerel, and other favorites of the sportsman.

I have just returned from a fishing trip to Virginia, and here, less than four hundred miles from the most vilely contaminated section of our entire coast, I found the weakfish, or sea trout, and croakers in greater numbers than have been known for years. Here in Jersey, we pay twenty-five cents per pound for weakfish. They were selling on the dock in Virginia for three and four cents per pound. In better than five years we have not had even a fair season on channel bass on the Jersey coast, and yet, in the section I visited, it would be safe for an experienced surf fisherman to bet that he could bring in a channel bass to every tide, during the season. Think of this. Think of this, and weep, you Jersey fishermen, who for half a dozen years or more have not seen the red of this copper backed warrior, as he rolled at the end of your line.

I have little patience with the pessimist, who lolls back in his chair and says, "It is God's will. We live in a commercial age and nothing the sportsman can do will remedy the conditions." Nor have I any sympathy for the rattle brained agitator, who without giving to the subject the time, the thought, and the amount of scientific investigation which it warrants, appears before our legislative bodies, waves his arms and calls for immediate and drastic legislation, which would probably do more harm than good, and which would certainly discourage future legislation in our behalf. We have state clubs, and organizations of fishermen and sportsmen. We have anti-pollution leagues, and local bodies of sincere men and women, all working from different angles to evolve a solution to our problem. Yet, until we combine under one head as a national organization, not one iota of good will be accomplished. The Izaak Walton League of America is giving us this opportunity. As I see it, and I am and have been for a number of years associated with various state and county organizations, this league is our last chance and our only chance for the restoration of the fish and the wild life of the nation, and for the restoration of those heaven given privileges of the out of doors, which constitute our greatest heritage.

The last five years have been years of greed, and of selfishness, and of shortsightedness, and these few years have seen a greater destruction to our wild life of forests, and streams and lakes, than any previous twenty-five years. And as these years compare with previous years, in their effect upon fresh water conditions, so too, do they compare in conditions along our coasts. You have seen the results, in the past. Now visualize, if you can, what the next five years will bring about. If

(Continued on page 552)

Pollution

Concerning the Protection of Fish, Fish Food and Inland Waters

Edited by DR. JAMES A. HENSHALL
Most Famed of Americans on This Subject

The Most Important Problem the I. W. L. A. Will Have to Solve

Cartoon by Everett E. Lowry

The Disastrous Results of Pollution

By DAVID M. NEUBERGER
Pres. of the National Coast Anti-Pollution League.

Reprinted from the Outlook of May 30, 1923

POLLUTION of the inland and coastal waters of this country presents a situation so threatening in its possibilities that it amounts to what may without exaggeration be termed a problem of National importance, imperiling health and food supply.

Authentic statistics and reports prove beyond the shadow of doubt that if we continue to permit further defilement of our waters—which means an increase in the area of bacterial contamination—we will be faced with losses and subsequent taxation which will run into billions in money.

Since 1910 the number of oil-carrying and oil-burning vessels which discharge refuse oils and tar into our coastal waters has increased more than one thousand per cent. The number of factories emptying waste of all kinds into our inland streams has also grown by leaps and bounds.

Such constant and growing contamination constitutes a real menace to all existing aqueous life. Indeed, Collinge, an English authority, reports that hundreds of sea birds have been found dead and dying off the English coast, their feathers heavy with oil. Our own Atlantic and Pacific coasts could tell the same tale. I myself saw wild duck and geese on the Atlantic coast in the fall of 1921 struggling vainly to rise. Last December, and again on April 10 of this year, the same condition existed on the New Jersey coast at Cape May, when all that was necessary for an oil-soaked wild duck dinner was to row out a short distance and pick as many of the wild fowl as one desired and pull them out of the oil-coated waters, where they were held secure.

Oil, tar, and other industrial waste poisons become increasingly deadly in proportion to the length of time they remain in the water. Ulcers and other skin afflictions are attributed to the irritating action of petroleum products. Fish have been known to disappear completely from pools and ponds following oil discharges into the water.

Pollution affects fisheries in numerous ways:

1. It will kill the fish outright.
2. It will divert a migration, which is the time fish can be caught.
3. It will smother the young by depriving the spawn of oxygen.
4. It kills sea plants and other minute particles whereon fish subsist.
5. It destroys the spawning grounds.
6. It kills vegetation in shallow waters.

That the fishing industry has been seriously affected by oil pollution cannot be disputed. The following figures bear striking testimony:

In 1908 the fisheries of Alabama on the Gulf of Mexico produced 10,610,000 pounds of fish of all kinds, valued at $387,000.

In 1918 the production dropped to 5,609,219 pounds, valued at $230,567.

In 1908 the Louisiana production, also on the Gulf, was 42,302,000 pounds, valued at $1,448,000.

In 1918 the production was 24,953,876 pounds, valued at $1,419,387.

In each case with the decrease in yield came the rise in price, which of course fell on the consumer.

South Carolina presents equally significant facts. The Government maintains its naval base and yards at Charleston. The oil and fuel and other plants along the coast of the Atlantic are among the largest in the country. The South Carolina harbors are the ports for innumerable oil-carrying and oil-burning craft.

In 1908,when food fish were abundant and prices low, the South Carolina catches netted 14,104,000 pounds. In 1918, when the war had increased the number of ships emptying poisonous waste into the waters and the industries were adding to the danger, the catch fell to 3,746,942 pounds, and the prices soared correspondingly.

Everywhere the effects of pollution are becoming more apparent.

The largest seed-oyster supply in the world, in the James River, Virginia, is threatened with destruction, as is the fishing industry of Hampton Roads, from this cause. Six miles of natural oyster grounds are ruined from trade wastes which have worked into the Delaware River. Here the fishing boats become so besmeared with the oil mixture that they are cleansed only with the greatest difficulty.

Although in 1918 catches on the east coast of Florida and in Georgia showed an increase, this is not due to food fish, but to menhaden in large quantities, used for fertilizer and fish oils.

Prior to 1914 some fishermen on the northern New Jersey coast made a good livelihood with catches of 100,000 pounds and more of weakfish, on an average, per week. This is more than the total catch in a season, and perhaps two seasons, since 1917. It was no uncommon thing to bring in 300 pounds of Spanish mackerel daily. Today there is hardly one left in those waters.

In the upper Ohio River the poisoned waters are a danger to the Government locks and dams. The waters of the Youghiogheny River (a tributary of the Allegany River entering a short distance above Pittsburgh) are so charged with acid that no boats go up without carrying extra barges containing good water.

The Mid-West States also suffer. Most fisheries in Lake Erie have been hard hit by water contamination. The Detroit and Maumee Rivers and Maumee Bay reek with pollution.

Some of Iowa's inland streams are befouled for a distance of thirty miles and more. Toledo, Ohio, reported an outbreak of general skin infections and diseases of the eye, ear, nose, throat, and sinus recurring regularly each year after the bathing season.

Indiana too suffers from the results of water pollution, and from Madison, Wisconsin, there has come a request for aid in dealing with this condition.

In January of this year the Superintendent of the Connecticut State Board of Fisheries and Game declared

that if the present conditions in that State continued the Connecticut River shad will be extinct in five years. In 1922 the catches dropped to a meager 18,821 from 176,085 in 1903.

His statement hardly comes as a surprise, for under the circumstances the outcome could not be otherwise.

A striking example of that which is thrown out of industrial plants into streams and the character and volume with which it is discharged may be found when referring to pulp mills alone.

Governmental reports show from experiments that 250 grammes of shavings in 28 liters of water with continuous aeration killed bass in twenty-four hours; that 100 grammes of bark under similar conditions killed them in nineteen hours; and that 500 grammes of chips floating free in the same quantity of water killed salmon fry in fifty hours.

The volume of material poison waste from sulphite pulp mills is enormous. Where the mill produces 100 tons of pulp daily it discharges about 6,000,000 gallons of mixed waters, and they carry from the blow-pit when the liquors are drained off about 4,000 pounds of free sulphur dioxide in solution, about 100 tons of decomposition products such as sulphonates, tannins, etc.—all poisonous to life in the streams.

It is probable that no mill of the size referred to would be located on any stream flowing less than from 150 to 160 cubic feet per second, or, say, 100,000,000 gallons per day. So that the area and the distribution of bacterial contamination are being increased continuously by the hour and day, and this is perhaps incessant.

In the Great Lakes, into which empty millions upon millions of gallons of pollution of every kind, the results have been inevitable.

The trail of the Careless Camper.

Lake Michigan in 1908 had a production of 40,019,000 pounds of fish, valued at $1,554,000, which in 1917 fell to 35,460,628 pounds, with a market value of $2,270,859.

Lake Erie produced 41,922,000 pounds in 1908, worth $1,280,000, and fell down to 38,300,238 pounds in 1918, worth $2,330,000.

The combined production of Lakes Superior, Michigan, Huron, Erie, Ontario, St. Clair, and the Detroit and St. Clair Rivers was 2,872,777 pounds less in 1917 than in 1908, but the market value was $2,429,969 greater.

Once the State of Michigan boasted of having the finest forest fishing streams, with more than 2,000 square miles on inland waters. Today it has barely one-fifth of the trout fishing of a decade ago.

A few years ago inland streams could dispose of (Continued on page 547)

The Preservation of Our Streams and Lakes

By CHARLES A. KOFOID

The following timely and convincing article by Dr. Charles A. Kofoid, Professor of Zoology, University of California and Consulting Parasitologist, California State Board of Health, shows the importance of observing and insuring proper and efficient measures of sanitation at camps of anglers, hunters and picnic parties who go to the great out-doors even for a day or two. It appeals more particularly to the proprietors of established summer resorts, and should be duly and conscientiously considered and acted upon, as the caution comes from one of America's best authorities on the subject, and one who speaks ex cathedra.

JAMES A. HENSHALL

THE health of the community in our cities and larger towns is carefully guarded by the proper control under expert engineering and medical supervision by our municipal and state boards of health, as a general rule, throughout the United States. The standards of installation and maintenance of public water supplies, inspection which keeps them free from contamination, and bacterial examination as to their freedom from the germs of disease, as well as treatment by well-known methods which destroy disease germs, when present, make it fairly certain that the public water supplies of most of our cities are relatively free from the germs of typhoid fever or other sources of disease.

It is, however, quite otherwise in the case of smaller towns and in many summer resorts, where the period of occupancy during the influx of summer visitors is so brief or so recent that adequate systems of disposal of human sewage have not as yet been installed. It is also true that even in the remotest fastnesses of the wilderness the careless fisherman or hunter may be a source of danger. He may be a "Typhoid Mary" who spreads disease germs and death in his wake because of

(Continued on page 550)

John Moreland on the Upper Mississippi

By
WILL H. DILG

A continuation of John Moreland, Fisherman, which ran in this magazine in the issues of Sept., Oct. and Nov., 1922.

"En route to the fishing grounds."

JOHN MORELAND and Robert Patterson, once his hectored secretary, but now friend, business associate and fishing companion, were sitting one late May evening by the lighted fireplace in Moreland's city mansion. They had been discussing business conditions generally, but for some minutes the old man and Patterson had been silently gazing into the crackling fire. Patterson could see that Moreland had something on his mind, but he had learned the wisdom of quietly waiting, fully knowing that when Moreland was ready to talk that he would open up in his usual direct to-the-point way. This evening, however, the old man was slower than usual, and from time to time shot quick inquiring glances at his young friend as though he hardly knew just how to begin.

"Load up your pipe, Bob, and then prepare yourself for the jar of your life," he said. Patterson loaded his pipe from a close-by tobacco container, lighted it and turned to Moreland.

"I bet Walter Strong five thousand today that I would take a larger black bass this summer on a fly rod than he would," snapped Moreland, "and I have got to win the bet and I expect you to help me do it."

Patterson looked his amazement for an instant, and then roared out, "I should say that is a jar! How in the name of high heaven did you two crusty old business men make such a bet as that?"

"Well, ever since our return from our three months' Canadian fishing trip last year that old Trojan has been picking on me and trying to kid me about taking up fishing. Of course, the real honest to God truth of the whole matter is that he is so damned jealous of my mounted 29-inch rainbow that he can hardly stand it. You know I gave my big fish to the Club and the boys have kidded him a lot. The fish hangs in the grill, you know, and nearly every day some of the wags around twit Strong about it and have kept it up until it has gotten on his nerves, and made him as touchy as an old bear."

"But how in the world did all this end up in a $5,000 bet?" laughingly ask Patterson.

Moreland reached for a copy of his Club's quarterly bulletin, and pointed to some lines of poetry which began:

"Strong was a Banker piscatorial—
And Moreland was just a plain dub."

Etc., Etc.

"Now, it happened that today was the monthly luncheon day of the Big Ten Club, and George Scott and Jim Simpson saw to it that every man of us were present.

"To make a long story short, they succeeded in making both Strong and myself hopping mad and it all ended up in a $5,000 bet."

Patterson studied for a while and then asked, "What are the conditions?"

"The fish must be a small mouth, must be taken in a river on a fly rod. Only one hook artificial lures are permitted."

"Sporty conditions, all right," said Patterson.

"Couldn't be sportier, and I simply can't let Walter Strong win that bet, and I expect you to go the limit to help me. I know Strong thinks because he has been a fisherman longer than I have that he has a cinch. Now Bob, you taught Strong to cast a fly, and you know just how adept he is as a fly caster. What I want to know is how much better is he than I am, and don't mince words in telling me the truth."

"He isn't a bit better fly caster than you are, and I don't think he has a thing on you when it comes to actual fishing. Those three months we spent last year up in Canada were not wasted, as you know."

"I never tried half so hard to learn anything as I did

"Bill Pohlman, master-boatman."

to learn to fish and those three months in the wilds of Canada saved my life," answered Moreland.

"Just as you say," said Patterson, "you must win that bet, but it isn't so much a matter of expert fishing as it is to select the proper place to do the fishing. Besides, you must have the proper outfit and that means a houseboat, a launch, and a crew, and above all, an intelligent and expert boatman. We must set at least a five pounder as our ambition, and in these days of polluted and commercialized rivers it is no easy matter to select a stream where five pound small mouth are to be occasionally found.

"You must know that with eighty per cent of our American streams so badly polluted that game fish cannot survive in them it follows that we have a terrible mathematical percentage against us. In other words, fully four-fifths of the big and little rivers of our country are barred against us because of pollution. Fifty years ago no such percentage obtained. Five pound black bass have always been rare birds—even in the early days five pounders were scarce, and when one was taken in running water that really weighed five pounds it was largely a matter of luck. Many a veteran bass fisherman has grown old and passed on to his fathers vainly treasuring the high hope of taking a five pound small mouth bass. We must not forget that a five pound bass on a fly rod is no easy matter, and I'm convinced somehow that that $5,000 bet will be won by the fisherman who takes at least a five pound fish."

"I'm relying on your deciding on the river and securing the outfit and don't let expense enter into your calculations the least bit," answered Moreland. "Now, where do you think we ought to go? I'm almost certain Strong plans on doing his fishing on the upper Mississippi, because he is always talking about the bass fishing on that river."

"I know he always makes two or three trips to the Upper River each season," Patterson replied. "The truth is," he continued, "Strong has chosen the best bet so far as I can see. There are over one hundred miles of fly fishing water on the Upper Mississippi, and with the hundreds of running sloughs and small streams pouring into the river, it makes the greatest breeding grounds for warm water game fishes in the nation. The truth is, I had those waters principally in mind from the beginning, and since Strong is almost certain to try the Upper River, it's up to us to beat him to it and secure the best houseboat and the best boatman for a fly fisherman on the river. Now, that I think of it, Fred Peet only recently told me of a houseboat being for sale at Fountain City, which is on the Wisconsin side, and I think I had better plan on going up there and looking it over."

John Moreland looked at his watch, and said, "It's just a little past nine. I wonder if there might be a train leaving for Fountain City tonight, and I wish you would go right up and get me the outfit."

And Bob left that night and proceeded to obtain an outfit which consisted of one houseboat, one high-powered launch, three row boats, and last, but decidedly not least, Bill Pohlman, one master-boatman. Incidentally the cost of the outfit, not inclusive of said Bill, totaled $6,800.

"Nate Ward, in charge of Walter Strong's outfit."

Moreland was delighted beyond measure, having but one suggestion to make, and that was that their old cook, Pete Lafitte, of the fondly remembered three-month Canadian trip, be sent for at once. "I like old Pete," Moreland said. "He can outcook anything on two feet, and besides, he's lucky."

"I met Strong at the Club today," he told Bob with a grin, "and he's finding it difficult to locate a suitable houseboat, but he expects to land one through Phil Mitchel somewhere about Rock Island. Old Phil will probably find him one, as he knows everybody along the river, and has fished it for more than half a century. He is the oldest bank president in Illinois and says he keeps young because he has been a fisherman all his life. The last time I met him he told me of a fly being named after him and sent me six tied in trout sizes and six tied for bass. I'm going to try 'em soon as the bass season opens and I'm mighty glad June 15th is so close at hand."

June 14th found Moreland and Patterson on board the C. M. & St. P. bound for Minneiska, Minn., where they were to be met by "The Victory," John Moreland's new motor boat. Both Bill Pohlman and old Pete Lafitte were at the station.

"Well, well, ol' fren', so you fish de ol' riv'. I roar when I hear John Morelan' fish de ol' riv' where I trap tree whole winta more dan fifty year ago. I give heem up many year ago. I never expec' see dis riv' more. We win dat fi' tousan' dollair bet in de Winnesheik bottom if de bass as beeg now as when I trap dere, but dat long tam—now, maybe no good. We see, old fren', but by gar we mus' win dat fi' tousan' dollair, ol' fren'."

Soon they were seated in the launch with Bill at the wheel and were speeding through the most beautiful river country in all America. The houseboat was moored at Belvidere, eight miles up river. Here the famous Buffalo slough formed, and ran parallel with the river for some nine miles or more.

Soon they were attracted by a houseboat coming down river and Bill Pohlman held "The Victory" as close as possible so that they might gain a full view of the approaching houseboat.

"I've got a hunch that that's Walter Strong's boat," said Moreland, and so it proved to be.

Strong was standing out in front and the two rivals waved a salutation as they passed in mid river.

"Did you see that Strong has named his boat 'The Winner'?" asked Patterson, with a laugh.

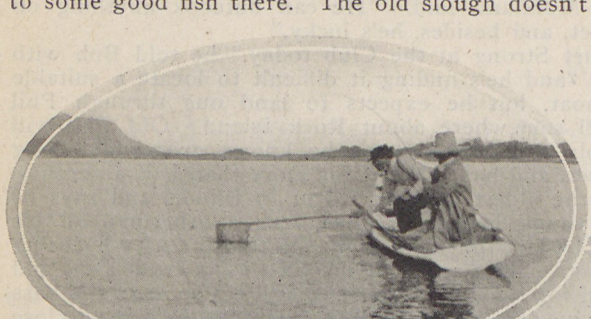
"Yes, I did, and I bet he noticed that my boat is named 'The Victory'," answered Moreland. John Moreland was as pleased with his new houseboat as he had been with his Canadian camp of the last summer, and that is saying all that can be said. He also was impressed with Bill Pohlman who knew every mile of the fly fishing part of the river.

"Now let's get down to business and plan our campaign," said the old man, as soon as he had been shown about the boat.

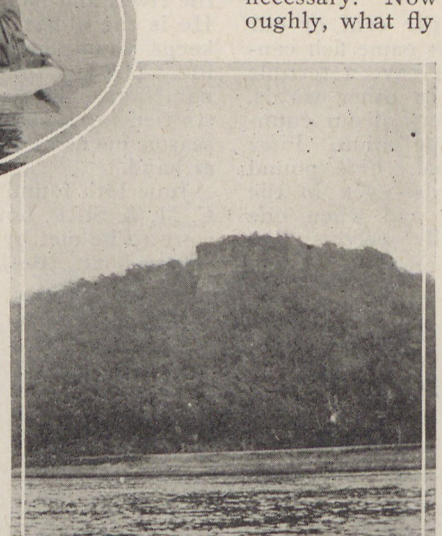
"I suggest that first Bill and Pete give us their plans," said Patterson.

Bill then outlined at length his plan. "The river is too high to consider either the wing dams or the rip-raps—

most of the dams are under water, and so that leaves us only the clay banks, and they are mostly in the sloughs. There is a good current running through Buffalo, and if the water is not too high we may hang on to some good fish there. The old slough doesn't begin



to be what it was ten years ago, before they senselessly shut off the water by putting in the big dam at Belvidere, but in high water it's worth a try out, I think! Quite a few big fish are still taken in the old slough each year. To tell the truth, I'm up in the air as to just what to advise at this stage of water. I can't just settle in my own mind whether it's best to fish Buffalo or hike straight down river for the Genoa district about 90 miles away."



"You see," continued Bill, "Old Nate Ward is directing The Winner outfit, and he knows this river in the dark and has fished it all of fifty years. I'm expecting him to tie up at the mouth of Buffalo, and that will mean there is too much water for good fishing in the sloughs about Genoa, right now, as I think there is. Nate was born in the Bax Ax district and take it from me he knows it from A to Z."

"Don't bother about Strong's crew, what do you think The Victory crew should do," said Moreland sharply, pronouncing **THE VICTORY** with a decided emphasis. Bill looked straight into Moreland's eyes and then said slowly,

"We will fish Buffalo for a day or two, and if we don't find them there we will then decide on one of two things —the Burley and Crooked slough district or the sloughs about Genoa."

"I would like you to understand," he added, "that in my opinion the $5,000 is going to be won in the next three weeks or its going to be a three months' fight till late September, before it will be won. I have fished this old river since boyhood, and have found that when the water is at a high stage the best chance for big fish is in the sloughs. After the water gets low it's river fishing and then it's a matter of hunting over more than a hundred miles of river for extra big fish. We'd better understand each other right at the start off." Bill spoke firmly, looking John Moreland straight in the eyes. "I'd rather die than have Nate Ward and The Winner beat The Victory. I like Nate Ward, you understand, but I don't like him well enough to have his boat win that $5,000 bet. That's talking straight, Mr. Moreland, and I hope you get me."

"I do," said John Moreland, "and to prove it, let's shake hands on it."

While the above conversation was taking place, Robert Patterson had put two fly rods together and shouted, "All's ready, let's go fishing!"

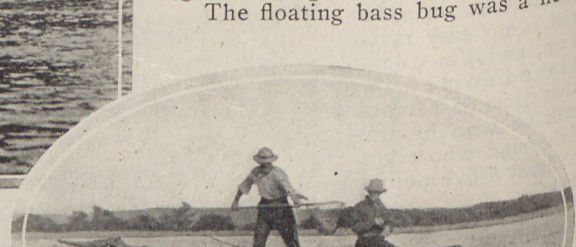
Bill then introduced Patterson to Jim Crowe who was to be his boatman and who also knew the old river like a book.

John Moreland was much interested in the ice boxes which were in each boat, and on which the fishermen sat, thus being raised a sufficient distance from the water to cast while seated with ease. Clyde Randal, the engineer and pilot of the party, was ready with the launch to take Patterson's boat three miles down the slough to Sand Shoot so that both fishermen would have unfished water. Moreland was to fish the banks near the houseboat. The Victory had a high-powered engine and Clyde started out at a thirty mile an hour clip. Moreland gazed after the speeding boat with pride and satisfaction.

"I'm no expert, Bill," he frankly admitted, "and I'm going to expect you to advise me when you think advice necessary. Now that we understand each other thoroughly, what fly do you want me to try first?"

Bill chose a Brann's Ranger as a starter, saying, as he affixed it to the six-foot leader, "I pulled Mr. Brann for three weeks once, and he's some man and some fisherman. I've been in the Navy and have made three cruises around the world and met all sorts of men and people, but that man Brann suits me better than any one I ever met and the fly he invented is just about the best bass bug on the river. I think we had better hit the head of the slough. I want to try out some high banks there and with this water we are likely to run into some big fish. But I warn you the water is just about 18 inches too high for good fishing."

The floating bass bug was a new



lure to Moreland and Bill idled along holding the boat within easy casting distance of the black clay banks. Moreland fished over a half mile of water, without a raise. Bill then said,

"Better lay off fishing until I pull down stream for about a mile and then we'll reach a stretch of water where we ought to pick up a few fish." A few minutes later they reached the new grounds.

"It looks good," said Bill. "If there are any feeding fish in the slough we will find them here, or it's hopeless to expect any fishing until the water falls at least six to eight inches."

He had no more than finished speaking when the pronounced plop of a working fish was heard as it dashed at minnows along the bank. "They're here, and now we must pay strict attention to business," said Bill. "Cast your bug as close as possible to the spot where we saw that fish rise."

Moreland followed directions and the fish struck hard at his lure, the smash of the striking fish sounding like the crack of a pistol. Moreland failed to strike quickly enough. He had never experienced anything like the rush of that bass as it tried to nail his Brann's Ranger. "That must have been a terribly big bass," he exclaimed.

"Yes, it was a pretty good fish, and might go three pounds, but nothing like the kind of a fish you have got to land if you win that five thousand."

Within a space of one hundred yards Moreland failed to hook a single fish, although he had at least a dozen

(Continued on page 561)

Paradise Regained

By PAUL B. RIIS

The Izaak Walton League Monthly has been made the official organ of the newly formed Superior National Forest Recreation Association.

Etching by Lee Sturges

THE Superior National Forest, in Northeastern Minnesota, has come into its own.

For many years it has lain up there between Lake Superior and the Canadian boundary, tucked away in a sort of a forgotten corner, known, it might almost be said, only to the forest service men.

Today it is the focal point for thousands of campers' eyes, is the subject for learned discussion by men high in official forestry, and is soon, from all appearances, to be greatly enlarged, and its many privately owned acres are to be consolidated as a part of it.

At Cloquet, Minnesota, on May 12, the chief forester of the United States, the state forester of Minnesota, representatives of the state forestry association and forestry board, the University of Minnesota, a host of lumber and paper companies, and a distinguished gathering of United States senators, met to discuss the Minnesota phase of the future of forestry in the United States.

It was the general opinion that if this country is to build up its vanished forests and save what few remain, national and state control of lumbering, reforestation, and general conservation, is imperative. It was also declared that one of the most practical things to be done was the purchase of private holdings in the Superior National Forest, and the extension of the boundaries of the Forest.

The United States Forester, W. B. Greeley, asked for opinions on this move, and, among many others, received the following:

Governor Preus: "The state and national holdings in timber must be extended. The Superior Forest might well be enlarged and consolidated, as advocated in the Izaak Walton League Monthly."

State Forester Cox: "The national holdings should be extended."

Fred D. Vibert, former state senator and forestry expert: "The Federal government could extend the Superior forest very profitably."

A. C. Le Duc, general manager, Oliver Mining Co., which also has extensive timber holdings: "I urge upon this committee the importance of recommending to Congress that the chief forester be authorized to negotiate the purchase of all state and private lands within the Superior National Forest, and, so far as is possible, all the forest lands adjacent to the Forest. If you succeed in that, you will have accomplished something for the people of the United States. The Forest now contains about 1,250,000 acres. It should contain 6,000,000 acres."

Charles L. Cecil, of the Cornell Forest Products Company, a recognized forestry student: "It would be good business for the Federal government to consolidate its lands within the Superior National Forest, and extend its boundaries."

The matter of consolidation and enlargement of the Forest was not new when this meeting was held.

The program was first advocated by a conference at Duluth, Minn., April 3, called by the chief forester for the purpose of discussing the advisability of building roads through the Superior National Forest.

The conference was attended by persons from all parts of the United States, from various walks of life and business pursuits, but all interested in the welfare of the big national forest.

It was one of the most significant meetings ever held in the interest of conservation in this country. For it was the first time that the people of the United States as a whole had shown interest in any national forest. The status of the national forests underwent a sudden change, becoming in reality national institutions.

Following the conference the Superior National Forest Recreation Association was formed, and it is this that I am going to tell about, because, like the conference that gave it birth, it is the first thing of its kind in the United States. Also like the meeting at which it originated, it is significant of a new interest in the national forests.

Unlike the fellow who was asked why he called his boy Peter, and who answered, "Because that is his name," this latest orb in the firmament of conservation, the Superior National Forest Recreation Association has chosen for itself a name that is clearly descriptive of its scope and expressive of its functions.

This association is unlike similar organizations cooperating with the Forest Service in connection with national forests, in that its officers and directors have been chosen from the broader national field, though its directorate shows a decidedly strong local representation. The alignment is composed of national and local personnel chosen from all walks of life and assures the association a balanced and well rounded out directorate, able to cope with whatever situation may confront it in the recreational development of the Forest.

Here we find on the board of directors, merchants, bankers, lumbermen, writers, newspapermen, landscape architects, fish and game commissioners, forest supervisors, foresters, educators, camp outfitters, engineers, doctors and a park superintendent thrown in for good measure. Of course we all know that too many cooks spoil a broth, but we also know that a machine, in order to run smoothly, must depend on many component parts, so that the load finds itself properly distributed, accelerating flexibility of power.

Directors: Will H. Dilg, 326 W. Madison St., Chicago, Ill., President, Izaak Walton League of America; Herman T. Olson, Commercial Club, Tower, Minn.; D. Lange, Mechanic Arts High School, St. Paul, Minn.; C. A. Dahlgren, U. S. Forest Service, Ely, Minn.; Dr. George T. Ayers, Ely, Minn.; A. E. Hoel, Gilbert, Minn.; Carlos Avery, State Capitol, St. Paul, Minn.; W. T. Cox, State Capitol, St. Paul, Minn.; Perry Williams, Minneapolis Journal, Minneapolis, Minn.; G. C. Carlson, Commercial Club, Tower, Minn.; George L. Brozich, Ely, Minn.; M. W. Peterson, Wilderness Outfitters, Ely, Minn.; P. J. Bayle, State Forest Service, Grand Marais, Minn.; Will O. Doolittle, Editor "Parks and Recreation," Minot, N. D.; Albert Britt, Editor "Outing," 47 W. 47th St., New York, N. Y.; A. H. Carhart, 900 Exchange Bldg., Denver, Colo.; R. D. Handy, News-Tribune, Duluth, Minn. All officers of the Association and the Commercial Clubs of Ely, Tower, and Grand Marais, one each, ex-officio.

The strong local representation from the forest communities is in itself a guarantee against future local exploitation of the Forest, of which the late auto road project is an example. The Forest Service now recognizes the association in an advisory capacity and future projects will therefore not again reach the aspect of a national protest. Local interests in themselves will checkmate the efforts of over-zealous opposition communities while the national representation with its clearer perspective will be in a position to give impartial council. Some of the latter have the additional advantage of being Minnesotans, thoroughly conversant with the needs and problems of the local people and peculiarly fitted to harmonize any differences of views.

The United States Forest Service has taken cognizance of the fact that something new under the sun, a national organization interested in a national forest, has actually come into being, and has recognized it as being

a representation of the attitude of the people in regard to the forest.

Like the conference that gave the Association life, it is significant of a newly awakened, national interest in not only the national forests, but all other great national playgrounds, whether officially designated as such or not.

The people of this country are beginning to claim their heritage — to claim for themselves the heritage which they have realized is theirs for the moment, to be passed on to their children.

The national aspect of the directorate must be characteristic of its membership also. It is the object of the Association to include in its membership outdoor people from all over this United States. Last year persons from thirty-one states and four foreign countries went through the Forest. It is to these people—these who have realized the great value of the Forest as a permanent recreation ground — that the Association is looking for the bulk of its membership.

And this is not all. The Forest is a breathing place of the American people. In it, as forming a component part of the outdoor life of this country, all Americans should be intensely interested. Members, therefore, need not necessarily be Forest users.

"It is not so much for its beauty that the forest makes a claim upon men's hearts, as for that subtle something, that quality of the air, that emanation from the old trees, that so wonderfully changes and renews a weary spirit."

—ROBERT LOUIS STEVENSON.

The time is at hand when every outdoor man must take stock of the situation and put his shoulder to the wheel that a small fragment of outdoor America will be saved for our children and posterity.

The future of our nation is closely linked with, and dependent on, conservation. We need the spaces where the air is pure and fragrant, where streams are unpolluted and teeming with aquatic life, that may multiply and grow abundant under natural conditions. We need the forests of our fathers, that they may be institutions of education, a source of joy, an inspiration of wholesomeness and rejuvenation of the body and soul.

The Superior Forest Association was the outcome of a gathering of men who traveled far to protect this unique area from destruction. You can assist in perpetuating the good work by joining the Association. Annual dues are a dollar. While the fundamental purpose of the Association is to form a unit of American citizens who will confer with the U. S. Forest service in all matters pertaining to the recreational use of the Superior Forest, the means of communication between the various members has taken on the form of information bulletins.

To each member, the Association, through Donald Hough, secretary, White Bear Lake, Minn., is prepared to send out a government map of the Forest, a yearly bulletin containing information of value to canoeists, and including clothing and food lists, equipment suggestions, and other "dope," and a monthly bulletin during the summer months containing such timely information as water levels of streams, the way fish are biting, the propitious lures, discovery of any new bass lakes, fly and mosquito situation, whether the big game are in the water, and where, fires burning or those extinguished, opening of new canoe routes and improvement by the forest service of portages, general improvements, establishment of new outfitting places, and so on.

In addition to this the secretary will advise individual parties as to suitable routes in regard to the desires, sexes, age or experience of the party.

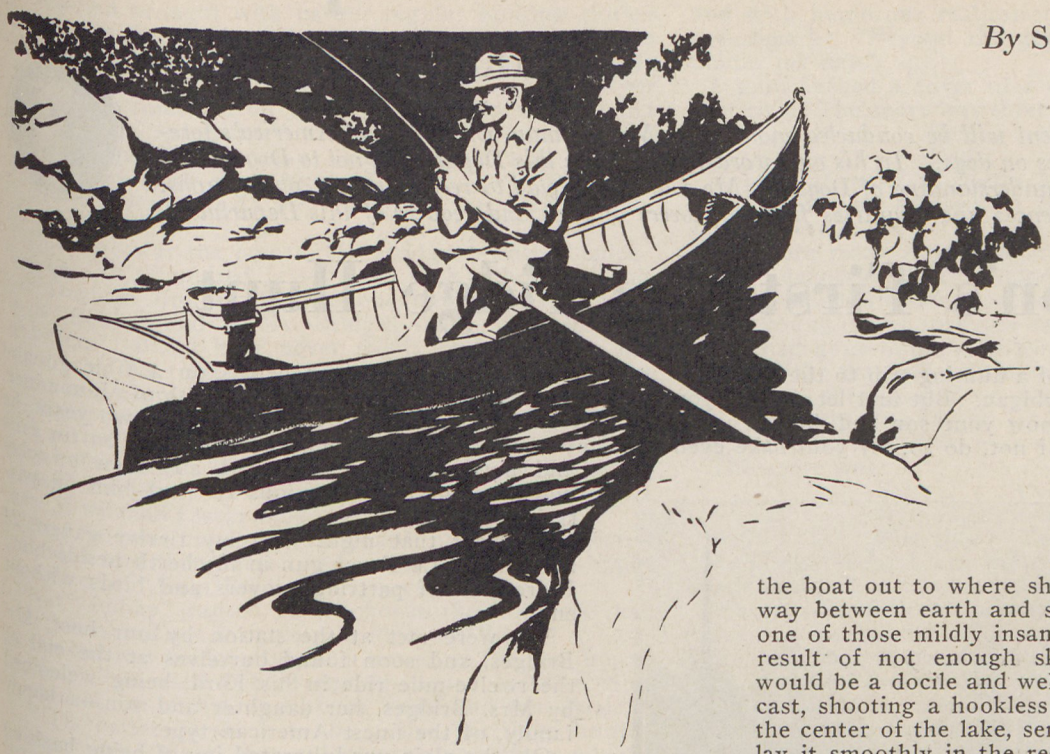
The Izaak Walton League Monthly, through the generous offer of its national president, Will H. Dilg, will continue to be the official organ for the Superior National Forest Recreation Association. It is hoped to continue a monthly column in the interest of the Forest, but as Secretary Hough has pointed out in the April issue, there remains also much unfinished work, left over from the Duluth conference which will again be brought to your attention in due time. This work requires the loyal support of our friends far and wide, so that the resolution passed will come to be a reality. Our Senators and Congressmen must be shown cause why this unique area must be more securely safeguarded by outright purchase of all private lands within the Forest and an extension of its present boundaries to join the lands of the Quetico Provencial Parks in the north and consolidate the three different portions of the Forest

(Continued on page 559)

The Bass That Were

By SIDNEY V. M. RAY

Illustration by Curl F. Gfroerer



THE first sound that reached Smith's ears, as he backed patient Lizzie off the dim road into the scrub palmettoes and shut off her engine, was the eerie call of a whip-poor-will somewhere in the moss-hung oaks and cypresses on the shore of the silent lake.

The second was a purposeful, efficient "chug-gluck," a feeding bass gathering in some too venturesome flyer of the night.

The lonesomest sound that comes to the ears of men, whip-poor-will's song, personified the solitude Smith had sought over twenty trying miles of country road; a repetition of that other heart-warming noise and the whisper of a ripple in the weeds at the water's edge assured him the trip might have material reward as well.

Smith had a day off. To make the most of it he had left his city home in time to reach this lake well before daybreak. A little pine knot fire on the bank crackled cheery companionship as he loaded rods, tackle box and grub into the boat, and with coffee pot simmering on the embers and pipe drawing well he sat down to wait for the first streaks of dawn that would let him see where his casts were going.

Smith had a feeling of almost personal proprietorship in this little deep, clear, spring-fed Florida lake. He knew every nook and corner of its two-mile circumference, from the tiny cove full of cypress knees, from which he had never taken a fish and therefore considered corroborated the tale of the local folk that in that cove lived a monstrous alderman of a bass who permitted no visitors, to the bed of lily pads that harbored the lighter-minded "younger set," the two-pounders by whom the splashing flop of a wooden plug was resented in a concerted rush to see who would be first to punish the intruder.

Drowsiness stole over him in spite of the steaming coffee, and the first tentative pipes of a mocking bird clearing its throat in the bush behind snapped his eyelids up to behold a faint paleness in the east. There was no hurry. Today was to be his own, every precious minute of it, and contentedly he watched the eastern sky brighten until long fingers of radiance thrust themselves fanwise across it.

The water was glass smooth, the sky overhead cloudless, and the moss hung straight down from the branches unstirred by any breath of breeze. It was going to be a day to test the skill of any angler. Casts would have to be long and accurate, and with baits of the lightest.

A shove against the sand bottom sent the boat out to where she seemed to hover midway between earth and sky, though not without one of those mildly insane gyrations that are the result of not enough skeg on what otherwise would be a docile and well-behaved boat. A long cast, shooting a hookless dummy far out toward the center of the lake, served to wet the line and lay it smoothly in the reel ready for the serious business of the day. Smith delved through his well-stocked tackle box, and decided to start the day with a surface pork-rind. The bait handled well on twelve-pound line, and the slender, resilient rod seemed a thing alive as it whipped the spinner to the lily pads. Down the shore he worked, offering the tantalizing wiggle-tail at every likely looking spot, behind sunken logs, over lily pads, into openings in the occasional weeds, and now and again taking deliberate aim at a cypress knee or stump and bouncing the bait off into the water with the helpless flop that many a bass had been unable to resist in the past.

The sun mounted higher in the sky as morning wore toward noon, and Smith found himself all the way around to the landing again without a strike. Once, indeed, back there about half a mile, where the stream comes in, he had seen a shadowy form slowly lift and as slowly sink back again to the shadowy depths from which it came. A gentle thrust of the oar blade had sent him back out of the danger zone, and he had carefully offered every bait and combination of baits the box could provide, even including the "brainstorm." So a partner of former days had named a red feather-bug with white wings and a bit of pork-rind fluttering astern. This apparition had been devised for use on dark days in the brown lakes and was the last thing anybody would choose for a bright day on a clear lake, but Smith was beyond logic.

Never had his faith in this, his favorite water, been so betrayed. Time after time he had come here the summer before, and time after time evening had found him with enough bass for supper and a couple over for the folks next door, as well as the pleasant recollection of many youngsters put back to grow up, disappearing with a surprised flirt of the tail as they found themselves free from that mysterious bug that had looked so good but that bit with such a sting and was so much stronger than any baby bass could expect.

Smith went ashore and rebuilt the pine knot fire, put the coffee pot on to boil, and looked ruefully at the little bundle of cracker meal and dab of frying fat in its oiled paper. Small use those would be, now. A smile of appreciation loosened the tight lines at the corners of his mouth as he unwrapped the sandwiches that Wife, in her wisdom, had prepared the night before.

(Continued on page 552)

Dogs, Game Birds and Sportsmen

By TRAVERS D. CARMAN

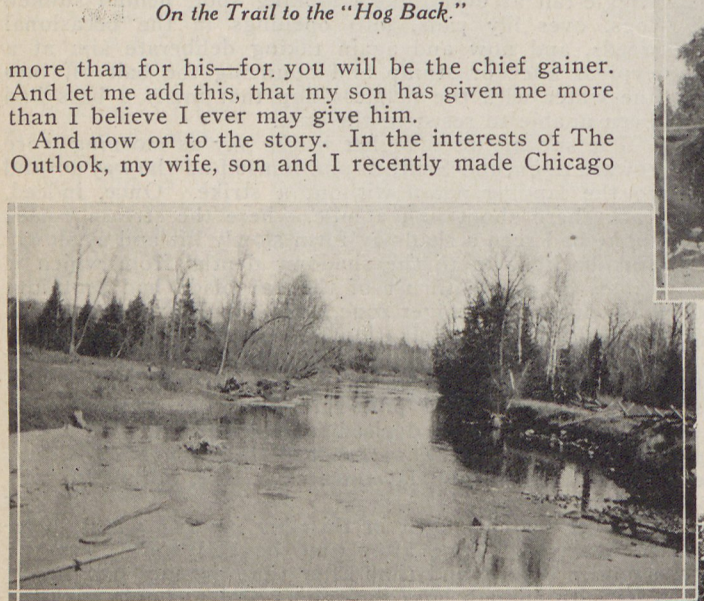
This Department will be conducted monthly by Mr. Carman, who is one of America's foremost authorities on dogs. In his own words, "I dedicate this Department not to Dogs, but to man's greater understanding of Dogs." Mr. Carman is glad to receive letters, photographs, stories, experiences and enquiries from all lovers of dogs and readers of this Department.

Son's First Partridge Hunt

THIS is the story of a hunting trip to the Northern Peninsula of Michigan. But first let me ask you this: "Do you know your son and do you make him your pal? If not, do so, for your sake even more than for his—for you will be the chief gainer. And let me add this, that my son has given me more than I believe I ever may give him.

On the Trail to the "Hog Back."

And now on to the story. In the interests of The Outlook, my wife, son and I recently made Chicago our home for something over a year. Fall came and with it the usual uncontrollable hunting fever.



On the Edge of the Wilderness of the Northern Peninsula—Truly a Hunter's Paradise.

One October Sunday afternoon Son and I were walking through Lincoln Parkway on the North Side and the peculiar indescribable smell of fallen leaves scuffed under foot affected me with its magic.

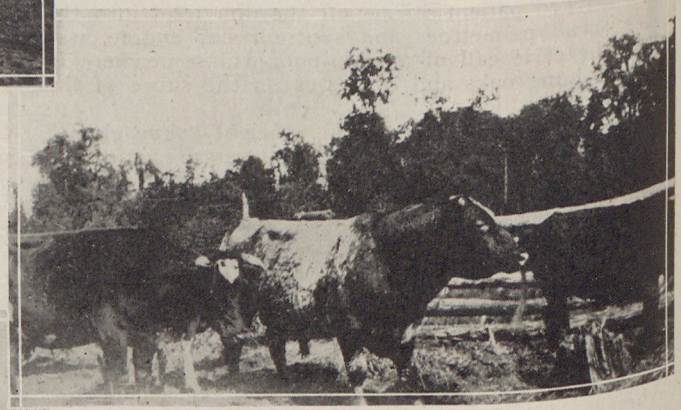
I found myself saying to Son: "It doesn't matter what the objections are, or where we are going, but we start the end of the week." Friday night found us climbing into two lower berths on a Chicago and Northwestern sleeper, bound for up north of Menominee.

Son was thirteen and it was time. For two years, he had practiced with my light brush gun, first on tin cans and bottles, thrown into the air, then on clay pigeons, and I was anxious to start him on partridge.

He slept that night with my twelve gauge, 24 inch barrel Le Fever gun in his berth beside him! I dreamed of partridge covers and birds without end.

We were met at the station by our host, Mr. Bridges, and soon found ourselves at the end of the twelve-mile ride in his Ford, being welcomed by Mrs. Bridges, her daughter and son—a happy family, of the finest American type.

Oh, the plain unadulterated joy of being back on the farm, with its homely welcome, sincerity, hospitality and barnyard noises and smells. The "Company Spare Room" was ours and all that the farm and inhabitants thereof possessed.



His Majesty "Bobby."

"Ma" Bridges—Mother to All Who Knew Her.

"Fish and Game Cannot Vote"—Judge J. M. Dickinson

Luncheon of deer steak (killed I fear a week in advance of the opening of the season), apple cider, vegetables and pie and we were ready for the afternoon hunt.

We had brought with us our regular hunting clothes of khaki color. Said our host, "The deer season opens in a few days an' ther be keerless, lawless hunters out kinda discountin' th' game law. Seems like as though yer orter have some red on ye." And he called: "Ma, ain't you got no red flannell we kin kinda wrap round th' huntin' caps of th' Carmans so as they won't be mistook fer deer by some onery hunter?"

Ma Bridges came to the rescue and we were suitably decorated.

But here was the point: Mr. Bridges owned a splendid herd of a hundred Jersey cows with a thousand dollar Durham Bull as their jealous husband. His name was "Bobby" and so Mr. Bridges said: "As gentle as a kitten." But I have never met a bull in all my life that I would trust until he was well disguised in the form of a porterhouse steak.

Moreover, Bobby was a free agent, roaming at will the partridge covers with his hundred wives. Said Son, as we started out, "Does even a gentlemanly bull like red caps?" Said I: "Wouldn't a deer hunter mistake us for deer if we didn't wear red?"

And so we employed farmyard diplomacy, located "Bobby" and then chose our hunting cover in the opposite direction from Bobby and all was well.

But "Bobby" caused us to choose the lowlands that afternoon and not a single partridge was flushed.

On our way back to the farm house, as the sun dipped golden downward behind the fir-topped horizon, Son looked at me with a wise young smile and remarked:

"'Tis better forsooth to be a live partridge hunter without dead birds, than a lifeless trophy of ye mighty 'Bobby.'"

But the next morning, "Bobby" was engaged in meadows far a-field and we chose our own cover.

We entered a hemlock and laurel covered thicket and partridge flushed from all sides of us. We moved into a clearing, a bird jumped, and Son, with the deliberation of an old hunter, put up his gun and killed it with one shot. His first bird and a clean kill!

We had no dog, for the deer law prevented hunting dogs in the State, and so Son retrieved his own bird. As he smoothed down the beautiful feathers of the splendid cock grouse, he said: "Dad, they're too beautiful to kill," but added, with eyes still aglow with the achievement of his first partridge shot on the wing, and with humorous realization of the inconsistency of the remark: "Beyond the game law limit of five per hunter per day."

I soon flushed a cover of a dozen or more birds and shot two. The score was three killed.

Son.....one
Dad.....two

A musical sound of blown horn was borne down the wind to us and advised us that luncheon was ready. Time, eleven A. M.

We were ready for the afternoon hunt at twelve and taking advantage of Mr. Bridges' advice took a trail that led up a side hill through poplars, white birch and alders, where young clover sprouted and birds were feeding.

We had gone but a mile when two partridge flushed. I missed the first and hit the second, which wavered for an instant, then started on with renewed speed. Bang from my partner's gun and I had the satisfaction of seeing Son bring him down with a bull's eye.

The score was:

Son.....two
Dad.....two
The time: Twelve-thirty

And mind you, I am supposed to be a fairly good brush shot and it was Son's first partridge hunt.

We continued along the trail, I in the lead only because Son insisted that I do so.

Suddenly there came to me the peculiar guttural "toight, toight, toight" of partridge—alarmed and about to flush. Looking ahead of me, I saw under a black alder bush, bent down with the snows of previous winters, with dead grass beneath enlivened with fresh outcropping of vivid green clover, a dozen partridge, restless, suspicious and prepared for flight. They got up in twos and threes. I shot down two and pushed Son in ahead of me. He missed with his right barrel and killed with his left. My first bird, only wing broken, unfortunately got away only to suffer, and I fear, ultimately die. So we each got one and the score was:

Son.....three
Dad.....three
Time.....One-fifteen P. M.

(Continued on page 549)

Timely Suggestions

WITH the approach of summer, the dog's need of a change in food and character of bedding should not be forgotten.

Reduce his allowance of meat and increase his ration of less heating foods, such as oatmeal, cream of wheat or rice mixed with bread and milk. Fresh cooked vegetables of any variety that a dog will eat are excellent, although potatoes should be fed him sparingly.

Dogs should be fed twice a day, with breakfast the light meal and the heavy meal at night. One or two Spratt's dog cakes, fed dry, make an ideal breakfast in that the dog is obliged to chew on them as he would crunch a bone and the desirable flow of saliva as an aid to his digestion is thus stimulated.

Boiled liver may be fed once a week with excellent results, as it is both nourishing and a laxative.

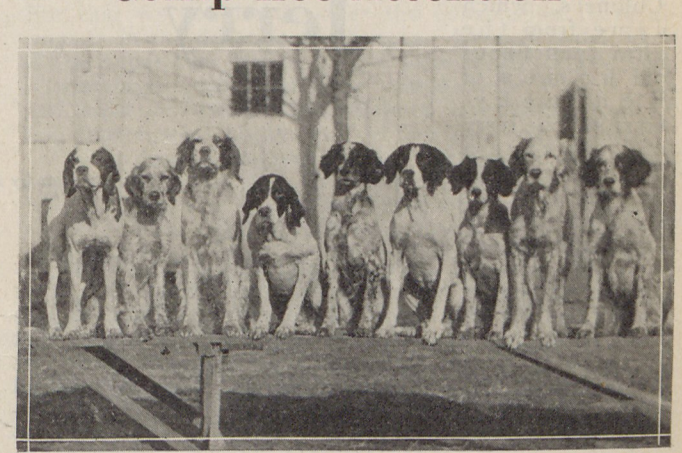
Look well to your dog's supply of pure, fresh water and serve it to him in a vessel that will not collect dirt and that may easily be kept clean.

Throw out all old bedding, clean your dog's sleeping quarters thoroughly, spray with kerosene, air and replace the straw with pine shavings.

If your dog's kennel is movable, shift it, but relocate it on clay or black soil. Sand is as attractive to fleas as are pine shavings distasteful to them.

And finally, remember that your dog needs exercise as much as does a human being. So if he cannot be permitted to run loose, give him as long a trolley wire as possible, with plenty of shade accessible along the line.

Comp'nee Attention!!



Photograph and Verses by Dr. H. M. Albaugh, of Cleveland, Ohio, a loyal reader of the Izaak Walton League Monthly.

Who'll stick to you, through thick and thin
Who'll for a blow, return a grin
Who'll forgive injustice done to him:
Your Dog!

Who'll find bob-white, in wood or dell
Who'll hold him while you place a shell
And when you miss, not say "dumb-bell"!
Your DOG!

"A quick glance disclosed the huge hulk of an enormous freighter."

Jerry

By F. F. D. ALBERY

Illustration by Herman Thieme

IT was positively certain that he had never had any other name than just Jerry. Just as positive as was also the fact that he was the best punter on the St. Clair Flats, but quite unavailable to the ordinary fishermen, for whom he had no use. Sometimes he even quarrelled with the very best fishermen and no matter how big the fishermen's pile or how diplomatic his diplomacy, Jerry was through with him till the last syllable of recorded time. In this way Jerry had quarrelled with Col. Rodman, whom he had piloted for over ten years and who was by common consent the best fisherman known to us. It was all a matter of etiquette — Jerry's etiquette, not the Colonel's, which came from the ultra punctilious old homes of Kentucky, for which Jerry did not care a hate. It was to be judged by his —Jerry's—idea of right and wrong. And that was not even the etiquette of the Flats for Jerry's standards were his own and what the other punters might think was of no more account to him than what they might think at Joe Bodore's, and that was getting as low down as you could get at the St. Clair Flats. It was something about a Sheepshead which the Colonel had caught and certain remarks following which led to a dispute, which in some way involved a question as to Jerry's knowledge of the habits of the fish in that region and it was all off, for Jerry's pride was touched. The Colonel was rowed back to the Star Island House and put ashore for the last time by Jerry and thenceforth forever after, nothing could induce Jerry to even consider the Colonel again. The subject had been approached by another doughty Kentucky fisherman, Col. Mark Mundy, but Jerry waved him aside as though he were King of all the Belgians pronouncing sentence upon a Congo criminal. Yes, his relations with the Colonel had been pleasant in the past, but no man could insult him twice.

He had the instincts of a true gentleman. That is to say he never swerved from his own standards. In this he was a man of principle and high ideals. His habitat was low in the reeds and looked like a large dog kennel. But it was his Castle and he respected it even as much as the Colonel respected his. Once they say the Colonel thought to impress Jerry with a sense of his importance by showing him a photograph of his beautiful old Colonial home in the Blue Grass Country. Jerry politely looked at it and handed it back to the Colonel very gravely, merely remarking,

"Most as big as the Star Island House. How many boarders kin ye 'commodate, Colonel?"

Fortunately for us, my chum and I came across Jerry at just about the time of his break with the Colonel and, as he was opposed to being considered on the general market, he seemed to rejoice at this opportunity of a new alliance and, knowing what we did about him, we were only too glad to feel that we could depend upon him. Jerry did not seem to care much for money for he would trust you from this season to the next, but he demanded absolute homage for his art, and this was readily given him, for how could it be otherwise? He was superb. He knew every fish in the Flats and was so intimately acquainted with all their ways that having him meant always a good string of fine bass.

I have said that Jerry did not care for money. I do not mean by that that his prices were low. By no means. On the contrary his rates were always higher than any of the others. But you had the consolation of knowing that Jerry was your champion as against all the world. He would fight the boat man and the bait man to the last item in order to furnish you the best equipment possible for the day's work. He was always up and out before any of the others, and had selected his stock of bait and when you came out of

the house after your four o'clock breakfast, there sat Jerry ready to push off the minute you stepped into the boat and, after you were miles away, you might look back to see the other fishermen just stirring about. He was fond of good grub, good whiskey and a good cigar. In fact, plenty of all these on all our excursions seemed to bind him to us by hooks of steel. I have never seen him the least under the influence of liquor. He was always cool and collected and never lost his head. In personal appearance, he was remarkable. Jerry was six feet in height, slim and muscular as a hound, with big hands and feet and a very small head, which was adorned with hair about the color of Manila rope, big ears, a funny red button for a nose and two sharp black eyes that saw everything at once, even what went on behind him. Out of his big cavernous mouth, came a deep resonant voice that sounded as though he had a perpetual cold. Such was the mighty Jerry, man of prowess, King of the Punters, whom all admired and feared.

For reasons entirely his own and which we never questioned, we had on this particular day come down through the Government Channel and were fishing far out in the open lake. A light wind from the south had stirred things up so that we were much tossed about and could not keep out anchorage, but were having great success in the deep water in landing as fine a lot of big fish as I ever saw, not one of them less than 3½ lbs. and from that up to 4¾.

It was the cleanest, prettiest catch I ever saw and it was rare sport to hook onto one of those big fellows and see him leap out of the water 100 feet away and then the battle royal till he was safe in the landing net. What they lacked in actual numbers they made up in weight and beauty for they were in their prime, fat and solid as a rock.

It must have been nine o'clock, for I remember I was getting hungry and would have suggested the lunch basket had I not been at that very moment manipulating a four-pounder of remarkable agility. We had drifted far away from our moorings and as the waves were increasing in height our anchor was dragging rapidly and we must have reached a point directly opposite the mouth of the Channel when I heard Jerry say:

"For God's sake, Smith, yank up that anchor fast as you kin," at the same time grabbing the oars and rowing fiercely. All this time, some place way up above us, a fierce little whistle was screeching away and excited voices calling:

"Get out of the way, you fools."

I had been so intent upon my catch that I had not noticed our course, but a quick glance over my shoulder disclosed the huge hulk of an enormous freighter. I realized we were in for it. Row as he would, with all his great strength, there was that dragging anchor and progress was nothing as against the terrible impetus of that mountain craft borne on the current that had started in Lake Superior and was halfway on its journey to Niagara. There was something awfully fascinating about its irresistible and deliberately sudden advent. Our little boat went down under it like a chip and we were in the water before we had time to calculate upon much. Seeing we were in for it, Jerry had coolly handed me one of the oars, and Smith the other, saying quite cheerfully, "Hang onto the oar, and get as far away from the boat as ye kin," and we parted company. I remember feeling my feet against the slimy side of the big ship as it glided down the tide, and of trying to push myself as far away as possible, for I was on my back and a fairly good swimmer. I know I clung to the oar in the churning suds and made up my mind to fight it out till help came. I had not very long to wait, for before the roaring waves had half died down, along came Jerry laughing hoarsely as though he had caught a new fresh cold and calling out to me:

"Hold on tight, we're all right."

"Where's Smith?" piped I.

"Over there on the boat, she's upside down, but floatin' all right."

By this time the big freighter had got her engines reversed, although she was half a mile away and was making to come back to us, but the commotion of her whistles, the shouting and general fuss had attracted the attention of the lighthouse keeper at the foot of the channel, and he was halfway to us in his sail boat. Seeing which and observing certain signals made by us, after I had arrived at the upturned boat and shaken hands with Smith, she went on her way again. We got into the light keeper's boat and then began to pick up our things which in time was accomplished. Our lunch was gone, but we found the basket bobbing serenely about on the waves. My fish was still well hooked and we landed him in good shape. Our string of beauties was securely tied to the side of the boat, and by the time we reached the lighthouse we were about ourselves again—all but Jerry, who seemed oppressed with some great sorrow, notwithstanding he had saved two lives in as many seconds. He said little, dried his clothes, ate with good relish what the light keeper's wife gave us, made the boat ready for the return trip and we were well on our way home before he unbosomed himself.

"Boys, I wouldn't 'a' had that happen for the hull o' Harsen's Island. How do you s'pose I could 'a' been so fergitful as to let our boat drift that fur?"

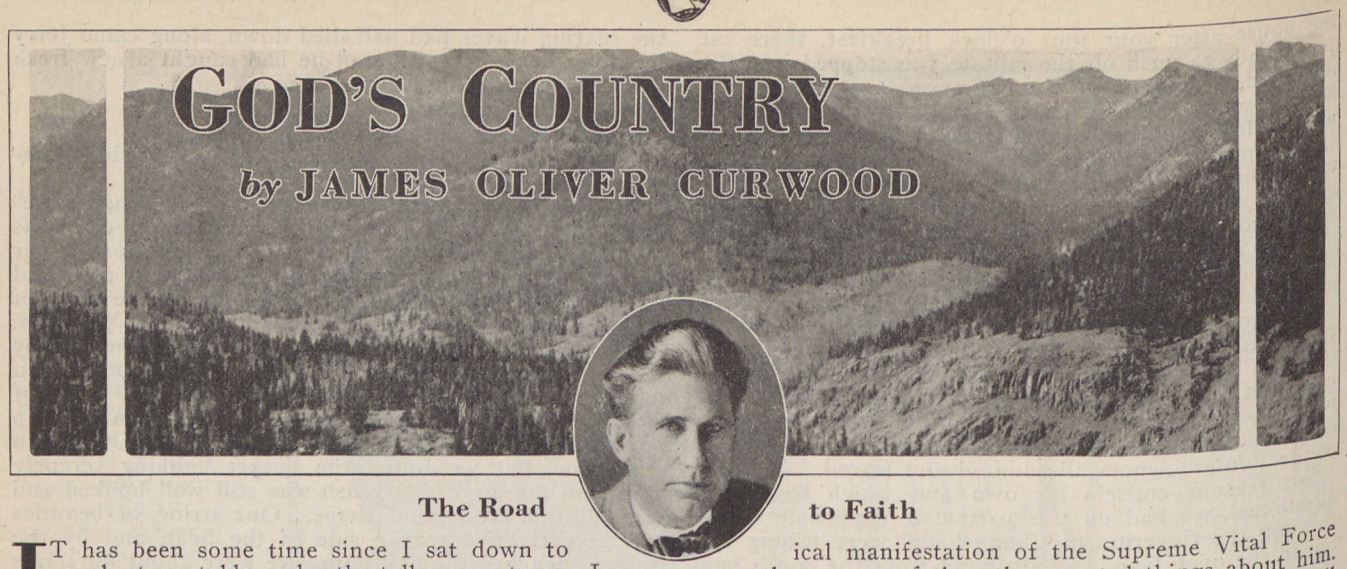
Our jug was at the bottom of the lake, so we could not console the poor fellow liquidly, but verbally we tried to make him feel at peace. There was no harm done, only a little ducking, not even a scar on the boat, most of our tackle saved and we were taking back the most beautiful string of bass ever seen, so even and fine, 20 of them and not one less than three and a half. What more could you want? "Cheer up, Jerry, when we get back to the Club House, we'll have a big drink of old Henderson County to the man who saved our lives."

"Saved Hell," said Jerry, "you men came damn near drowndin', the both of ye." For Jerry's pride was hurt. His record was marred. There was a blot on his 'scutcheon. Realizing that that was the sore spot, we tried to patch it up. We promised not to say a word about it. But the light keeper, he'd tell. So we decided to fish again tomorrow in the same place and fix it up with the light keeper and his wife. But the people on the freighter, they'd report it and it'd get in the papers. For that we could only offer the consolation there always is in the doctrine of chances. Even if it did, even if the paper that had it in got back to the Flats, even if somebody read it, nobody would know who it was and most of 'em wouldn't believe it anyhow, because the papers were always full of lies about the Flats.

And so in one way and another we combed him down and consoled him and when we got back to the Club House, there was so much admiration for our beautiful string of bass (Col. Mundy said it was the evenest and most beautiful and altogether the finest he had ever seen, and he'd been fishing the Flats for twenty years), that nobody noticed that we frequently retired to the bar room and always took Jerry with us. But, for many years after, it was remarked that Jerry always made his engagements with reference to the time when we should come to the Flats, about which he was uncompromising.

Smith and I kept our word. We never told on him. I should not tell this yarn now, but Jerry is fishing in the Jasper Sea.

"Conservation is the intelligent effort to make the best possible use of our country's natural resources, both of beauty and of game supply, and to hand them on as far as possible unspoiled to our children."—**HENRY VAN DYKE**



GOD'S COUNTRY

by JAMES OLIVER CURWOOD

The Road to Faith

IT has been some time since I sat down to work at my table under the tall spruce trees. I have had an experience during the past five or six days which is one of my rewards for letting nature live, and, for a space, it quite completely upset me, so far as work was concerned.

In other words, I have been having an experience with a species of vermin which I love. The baby vermin of this particular species are, to me, almost as lovable and quite as cute in their ways as human babies; and for the adult vermin, the mothers and fathers of the babies, I have a far greater love and respect than I have for many males and females of my own breed. And, taking it all round, they are a cleaner, handsomer, and more wholesome-looking lot than the average crowd of humans, though they are—because of the mightiness of man's edict—nothing more than vermin.

I am speaking of bears. A few years ago, one of my most thrilling sports was to hunt them—blacks, grizzlies, and polars. Now I consider them, in a way, my brothers, and I am having a lot of fun in the comradeship. I am filled with resentment when I consider that in all the states of this country, with the exception of two or three, the law says these friends of mine are "vermin," along with lice and fleas and maggots, and that they may be killed on sight, babies and all, because, —perhaps once in his lifetime,—a bear living very close to civilization may make a meal of pig or lamb. If every human mother in the land could hold a baby cub in her arms for five minutes, there would be such an uprising of feminine sympathy that the laws would be repealed.

In thinking again of our mothers, I would give a good year of my life if a million of them could have seen what I have seen during the past few days. For, after all, I believe that nearly all great movements toward better and bigger and more beautiful things must and will begin with women. No amount of "equality" will ever take that blessed superiority to men away from them. Today, even religion, shameful to men as the fact may be, rests on a pillar of women's white shoulders, and all the faith that the world possesses first finds its resting-place in their soft breasts. And I look ahead to the day, with unbounded faith of my own, when women will see, and understand, and begin the great fight toward comradeship with all that other life which is so utterly dependent about them now—life which throbs and urges in every living thing from the grass-blade and the oak to the "instinct" creatures of flesh and blood. Then shall we have a "religion of nature," with a force and a might behind it which will glorify the earth, and man will come to realize that he is not God, but only an insignificantly small part of God's handiwork. And when man comes to that point, where he casts off his arrogance and his ego, then will the time have come for the birth of a satisfying and universal faith in that great and all-embracing Power which we know and speak of in our own language as God.

And the very foundation of this faith, I believe, will be an understanding of all life, the acknowledgment at last that man himself may not be a more precious physical manifestation of the Supreme Vital Force than many of the other created things about him.

It is because I believe that nature, the mother of all life, is trying to teach us this great truth in a thousand or a million different ways, in the smoke and grime and crush of big cities as well as in farm-land and forest, that I come back to my little experience with the bears.

About six or seven miles to the north of me is a great ridge, plainly visible from one of the halfway limbs of my lookout spruce, a sort of barrier which rises up between me and the still vaster hinterland beyond it. Sometime in the past, a fire swept over it, so that now it is covered with a gorgeous and splendid growth of young birch and poplars, and virile patches of vines on which, a little later, there will be an abundance of strawberries, raspberries, roseberries, and black currants. Three times I have traveled for miles along the cap of this ridge. To me, in all its richness and promise, it is a glorious manifestation of Life. It breathes under me and about me. I can fairly hear its compelling youth bursting from its growing leaves, its swelling fruits, its flowers, and from the mold that pulses and throbs with the vital forces under my feet. I think I could live and die on this ridge, and never be at loss for company.

On my first visit to the ridge, being overtaken by storm, I built me a brush shelter in a lovely spot close to it, with a tiny creek of spring-cold water not more than a dozen paces away. On my third and last visit, I returned to this spot, and ran face on into my adventure. From the sheltered bower of balsams where I had built my wigwam, I could look up a rolling, meadowy breast of the ridge, so perfect in its adornment of vine and bush and small clumps of young trees that, to one not entirely acquainted with the exquisite art of nature, it would almost seem as though a human landscape-architect had "laid out" the little paradise which was my hillside back yard. On this particular morning, coming up quietly, my eyes were greeted by an amazingly pretty spectacle. The green hillside, soft and velvety in the sunlight and shadow of the morning, was in full possession of two families of black bears.

So close were the nearest of them to me that I dropped like a shot behind a big rock, and the breath of air that was stirring being in my favor, I was at a splendid vantage-point to take in the whole scene. Within forty yards of me were a mother and three cubs, and a little higher up—perhaps twice that distance—were a mother and two cubs. At almost the very crest of the ridge were two more bears, which I at first thought were adults. A closer inspection assured me they were last year's cubs, and possibly not more than a third grown, though to which of the two mothers they belonged, if to either, I could not make up my mind. Frequently, instead of setting out in life for itself, a black bear cub will follow its mother through a second season, and I judged this to be the situation here.

For two hours, I did not move from my place of concealment. That spectacle of motherhood and babyhood on the hillside, with the virile and luxuriant life of nature pulsing and beating all about it, was a new chapter in

my book of religion. It was pointing out to me, in perhaps a hundredth or a thousandth lesson, that all life is the same, and that it is only language, or the want of language, that makes the difference in the "life-relationship" of all created things. I could fancy, as I lay there, just how the Supreme Arbiter of things had given physical being to all this life that was about me, as well as the life that was in me. It has all come from the same dynamo, so to speak—a spark of it in each tree, a spark of it in each flower and shrub, and blade of grass, a spark of it in each of the beasts of flesh and blood on the hillside, and a spark of it in me. Our life was the same. It had all come from the same vital source, from the same supreme fount of existence. Yet how different were the forms it animated! Close to my hand was a beautiful rock-violet, blue as the sky, its velvety petals freckled with tiny flecks of gold; a few yards away, perched among the rustling leaves of a birch, a brush-warbler filled the air with melody; back of me, the tops of the thick balsams whispered softly, and up there I could hear the grunting of the mother bears, the squealing of the little cubs, and a gentle murmuring sound that came from the ridge itself, as if all living things were fighting for a language, struggling to give voice to something that was in them.

I have had some amusement and a little discord over the teapot tempests that so-called nature-scientists occasionally stir up among themselves over the "humanizing" of wild life. Man's ego has possessed him so utterly that it is distasteful to him to concede anything "human-like" to any creature that is not in his own flesh and form. For my part, loving all wild life as I do, I am proud and glad that it does not possess more of our human qualities. If I write honestly of what has come to me in my own wide experience in nature, I must—no matter how unpleasant the statement may be—confess that wild life **does** possess a great many characteristics that are very "human," and the ways of its members are in many instances strangely the same. I could see little difference between my bears on the hillside and two human mothers and their children, except in their physical appearance, and the fact that the humans would undoubtedly have made a great deal more noise. But the bears were handsomer—begging the ladies' pardon. Their sleek coats shone like black satin in the sun, and the cubs were cute enough to hug to death. But they were a worry to their mothers for all that, and especially one of them, which appeared to be the hog-it-all member of the family nearest me. Whenever the mother bear pawed over a stone or pulled down a tender bush, this little customer was always there ahead of the rest of the family, licking up the choicest grubs and ants and getting the first mouthful of greens. Half a dozen times, the mother slapped him with her paw, rolling him over like a fat ball. But there could have been no very great corrective power in the cuffings, or else he was toughened to them by usage, for he was back on the job again without very much loss of time.

For almost two hours, the bears fed on the hillside. Several times the two families drew so near together that the cubs intermingled and the mothers almost rubbed sides. I feel that the interest of this particular page would be greatly increased for many of my readers if I added a ferocious imaginary fight between the two mothers and a bloody feud between the youngsters. Bears do fight when they meet—sometimes—just like humans, only not as often. But it is my duty to relate that these bears were at peace on this particular day, and that they seemed to enjoy the mutual companionship. It was all so fine that I had an impelling desire to go up on the hillside and become a comrade with them. When the feeding was over, and the cubs were wrestling and running about in play, I almost rose up from behind my rock to call out my friendship to them. The lack of one thing held me back—that one thing which all nature is crying out for—**a language.** I feel they would have welcomed me could I have told them I was a friend, and wanted to play with them, and make them a present of some sugar. But instead of that this is what happened:

In their play, two of the cubs had descended within twenty feet of my rock. One of these was the gourmand. Somehow, he lost his balance, rolled over, and came tumbling down. When he stopped he was not more than half a dozen feet from me. As he brought his fat little body to its feet he saw me. His eyes fairly popped. It seemed to me that for a full minute he did not move or breathe. And during that same minute I remained as still as a rock. In his amazement and his wonder, he was the funniest thing I had ever seen, and in spite of myself, my face broke into a grin. Instantly there came out of him a little, piggish grunt,—and he was off. Up that hillside he went as if the world was after him. He did not stop when he reached his mother and the other cubs, but seemed to hit it still faster for the top of the ridge. The mother looked after him, sniffed the air, and rose to her feet. In half a minute, she was lumbering after him, the two remaining cubs hustling ahead of her.

A hundred yards away, the second mother bear took the warning. In a very short time, they had all disappeared over the cap of the ridge. I had not shown myself. I had made no sound. The wind was still in my favor. Yet the frightened cub had given warning to them all. For no other creature but man would they have fled like that. Even in the face of a pack of wolves, the mothers would have turned to fight. Something had told them that man was near—yet only the cub had seen and smelled that man, and he had probably never seen or smelled another. Yet he knew, and all the others knew, that man was the deadliest of all enemies. And I am half convinced, as I write this, that nature has at least the beginning of a universal language, that the centuries and hundreds of centuries have given it four words, and these words are: "Man is our enemy."

This fancy makes one wonder why man is so jealous of himself. The Supreme Power is immeasurable, he tells himself. It has no such a thing as limitation. Heaven, no matter in what form he may conceive it, is utterly boundless. Yet he is jealous of it. He does not want to concede that any other life will form a part of it but that of his own breed. He has tried, through unnumbered centuries, to fool himself into the belief that he is the one and only thing in all creation upon which the Ruling Power of the universe has its guardian eye. He has tried to make himself believe that he is the one toad in the huge puddle of life. He has not conceded that an all-powerful but tender God might love flowers and birds and trees and many other living things as well as he loves man. And as I sit here under my spruce trees again, it seems to me that, just because he has been so near-sighted, man has not yet found a faith which is all-comforting and of which he is utterly sure.

As he comes to understand more and more how imperfect a thing he is, the more unstable his faith becomes; and the sacrilegious thought comes to him, unconsciously but with terrific force: "If I am the chosen handiwork of God, then I can have no very great faith in the judgment and workmanship of God."

And as the suspicion grows upon him that he may **not** be the "one and only" child of God, he cries out wildly in these modern days for evidence. He tries to bring spirits back from the dead that they may offer him some proof. He quests vainly for "revelations" that may satisfy him. He says with his mouth, "Yes; I believe absolutely in God," yet, in his heart, he knows that he is half lying,—because of fear of what his neighbor will think if he speaks the truth. He wants to believe there is a God. He wants to **know** there is a God. Yet he is afraid.

And, personally, I am glad that the time has come when he is afraid. I think it is the real beginning of his salvation and the dropping-away of his egoism. Today he is beginning to see all life as he did not see it yesterday. And tomorrow his eyes will be wide open.

That is my faith. I believe that God is greater than humanity has ever conceived him to be. I think he is "a common sort of fellow," and I write these words with all the holy reverence of which the soul is capable. I

(Continued on page 560)

Bird Lore

by

Bob Becker

Editor "Woods and Waters"
—Chicago Tribune

JUNE is the month when the fisherman, who is also a bird fan, is in his glory. Yea, Bo! but it's the life at this time of the year. When a fellow invades a woodland thicket with his fishing tools he is going to see some wonderful sights if he actually keeps his eyes open. After all is said and done, how many of us actually do pick up the details of an outdoor picture when we are out on a trip. I've been fishing with fellows who are so intent upon getting a heavy creel that they haven't time to appreciate anything but the feel of a fish on a line. If they only knew what they are missing in the outdoor game! That's why the chap who loves birds as well as the fishing game gets so much more out of a trip than the one who thinks only in terms of fish. The latter, if he does strike a day when the fish aren't biting, is miserable because he hasn't the faculty of enjoying other phases of the outdoors. The ambition of every true lover of the "quiet places" should be to acquire an all round knowledge of outdoor life. When we consider this kind of a man the picture of Theodore Roosevelt comes to mind. Theodore Roosevelt wasn't a champion at anything. He so loved all kinds of outdoor sports that he wasn't satisfied with playing at one or two—he had to get into all of them. He was an excellent rifle shot—but no champion. You will remember that he admitted Kermit, his son, could shoot better than he could. Roosevelt liked to fish, yet you do not think of him as a champion fly caster. He was a finished horseman — he could box, play a good game of tennis, fence, wrestle, and do many other things extremely well, but he wasn't a champion at any of these sports. Lastly, remember his knowledge of birds.

Roosevelt was passionately fond of birds and he knew them. It is said that had Roosevelt devoted more of his life to the study of ornithology he could have been known as one of the outstanding naturalists of his time. But he looked upon the study of birds as all of us should regard it—a wholesome, recreational fun making sport — something which gives the outdoor lover a great enjoyment of his time while afield. The all round outdoorsman certainly does get a whole lot out of life. Not so?

A Screech Owl.

Florida Duck.

Pictures taken in Florida by Blair Coursen of Chicago, and entered in bird photography contest.

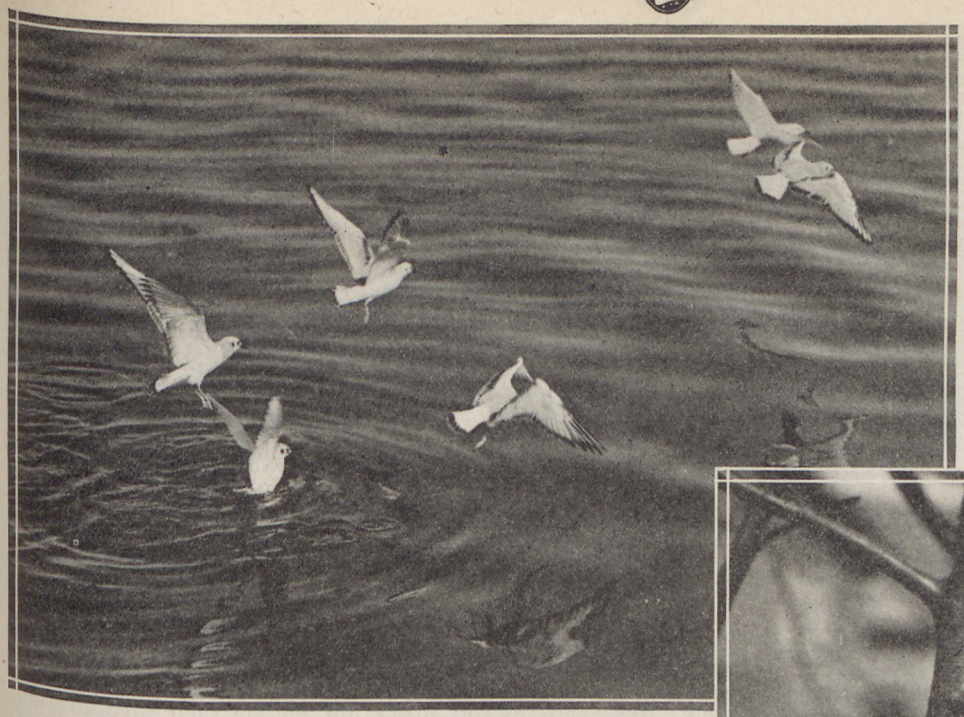
Here are some more entries in our Bird Photo Contest. The kodak shooters are comin' in the fold without doubt. Better get busy and send in your best bird photographs. There's a $125 kodak for the fellow that shows us the finest picture of a wild bird. No entry fee.

Blair Coursen is the boy who is responsible for the dandy photos which you see this time. He writes us as follows:

"I've been mighty interested in 'Birdlore' since it was started. The bird photography contest is a splendid idea and I have enjoyed the pictures you have already run.

I haven't done anything with the camera for the past two years, but I dug up some old "shots" that you may run in the contest. Please enter three of them—numbers one to three.

Number One is a group of Bonaparte Gulls at Daytona, Florida. Taken with an old style Reflex camera: time, 1/500 of a second.



Bonaparte Gulls.

Number Two is a female Florida Duck on nest at Mosquito Inlet Bird Reservation, Florida. April 14, 1918. Cycle Graphic camera, size 4x5; time 1/10 of a second.

Number 3 is a female Screech Owl (grey phase), taken in Florida in April, 1918. It had a nest nearby in a hollow palmetto. Cycle Graphic camera, size 4x5; time 1/50 of a second.

Nesting goose.

Picture taken by Jack Nelson, Elgin, Ill.

B. C. also sent us dandy photos of a bluejay, a chickadee, young juncoes and — mark you —a delightful "shot" of the sweetest looking trout stream you can imagine. And he writes "this pool is dear to my heart as the kind of a one I hope to find waiting for me in the 'happy hunting grounds.' One memorable day I extracted a 4½ pound brown from this pool which is on a branch of the Beaverkill, near Hardenburg, New York." You're there, B. C. No doubt about that and we'll wager you get a lot of fun out of your trips because you like birds as well as fishing. And your pictures are excellent. Judges, take due notice, please.

* * *

A nesting goose right near Elgin, Illinois, has been "shot" by an ardent Waltonian of that town and we'll say he did a pretty good job of it. Jack Nelson, a member of the Elgin Chapter of the League, did the "shootin'," and he has very kindly sent it in. Jack writes as follows:

My Dear Mr. Becker:—

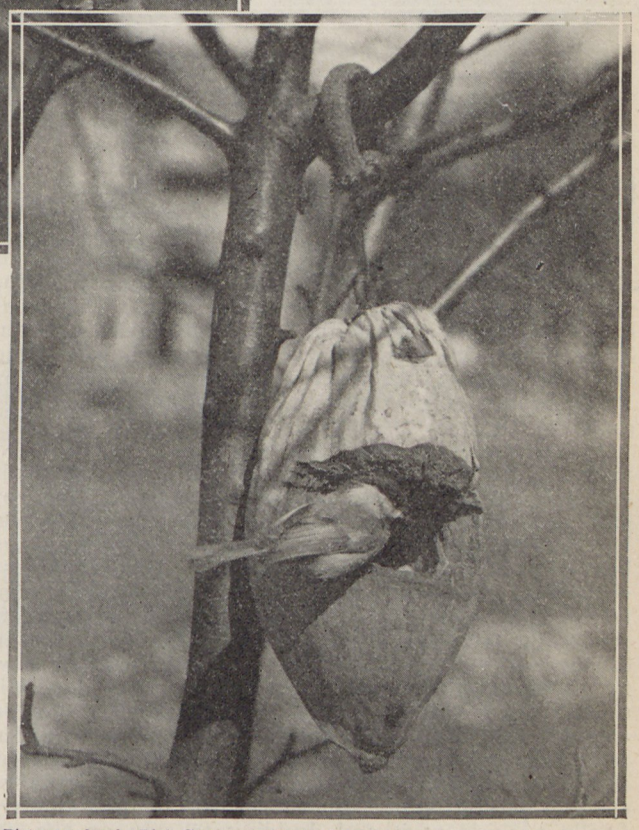
I am sending you a photograph of a nesting goose, taken near Elgin, Ill., on the 5th day of May, along a creek, the course of which the owner of the land had changed, leaving the land where the creek had been full of ponds. Any one walking along this creek could pass within a hundred yards of this goose and never see it as there is a small clump of willows near where she has her nest. (The side view is taken from these willows.) And it leaves the willows between the person on the creek and the bird.

I was told of the goose by a fellow who lives near the spot. I have been talking Ike Walton to him and he knows how I like to see anything interesting out o' doors. We could get within six feet of the nest without disturbing the bird. Am waiting for the young geese to hatch out and am going to try and get a photo of them. This was taken with a Rexo camera; distance, 8 feet; time, 1/25 of a second; stop, 16 u. s.

Only wish you could give the goose the once over. Geese had been feeding on this spot all spring, until they moved north. And how do you dope it out that she stayed here? Has the spring shooting got anything to do with it? I'll say that it has. You may enter this in the Prize Photo Contest if "good enough."

Jack Nelson.

Chickadee



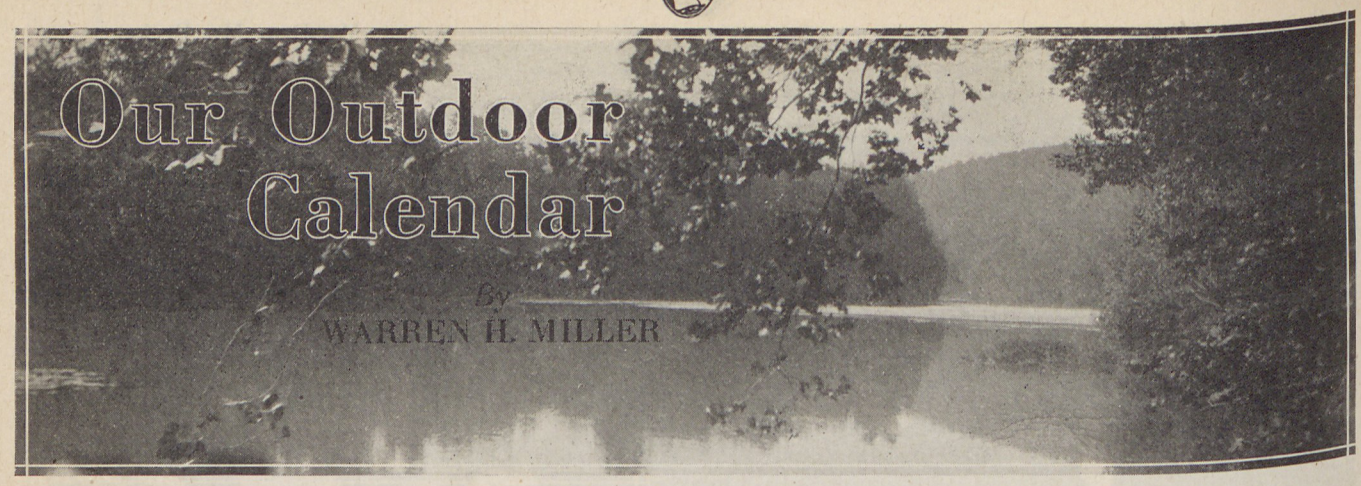
Pictures taken by Blair Coursen and entered in contest.

Next Month

look for more photographs which are being entered in the Birdlore Contest for the

$125.00 prize

Have you sent in your entries yet?



Our Outdoor Calendar

By WARREN H. MILLER

June

This department of fascinating and practical outdoor lore will appear regularly and will be conducted by Warren H. Miller, former editor of Field and Stream. There is no better authority in America on camping and living in the open than Warren H. Miller. —The Editor.

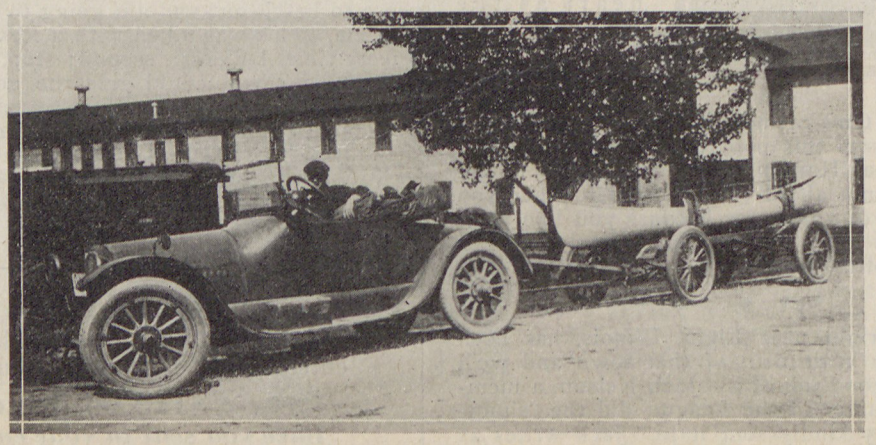
THE Rose Moon. We all know **what** rose! Not the artificial product of hot house and gardener, but our native Wild Rose, strong, hardy, useful in its abundant haws for fall bird feeding, and above all beautiful with the beauty of simplicity. What outdoorsman does not love the Wild Rose! And where in our country is it not found?—on wind-swept moor and lonely down, in open natural meadows, in brier patch and vine thicket, wherever there is sun there is our hardy beauty of the pale pink petals and the heart of gold!

June is an overwhelming month in the world of Nature. There is so much going on! Do you love birds? —There will be a whole chain of nests demanding your care and inspection, so be it is done gently and bearing gifts to the mother birds. Any little bushy downs bordering some pond will have such a chain of nests, deep hidden in stout bushes, where hawks cannot penetrate and snakes find the lacery of twigs too intricate for their inferior eyesight. Here you will find a fascinating domestic world, a world where the mother bird first will fly off in alarm at your approach, but if it be done with a long twig cleft at the end and bearing a wiggling caterpillar as a peace offering, she will come to endure and then to welcome your visits. Catbird, vireo, robin, thrasher, song sparrow, it is all one—the old lady will eye you nervously, but your worm with definite approval, finally pecking at it and deciding to stay on the nest after all. And you will come to respect that pair of birds, what time the nest has a yellow assemblage of gaping mouths and you and your hard-sought worm are outclassed by the thousands brought daily to those hungry fledglings by the industrious and keen-eyed parents. My bird calendar shows all the summer visitants present and accounted for by June; all the vireos, the scarlet tanager, redstart, cardinal (up since May), to whee, hermit thrush, wood thrush, veery, red-headed woodpecker, bobolink, red-winged blackbird, all the wrens, the orioles, the flycatchers and kingbirds, our two cuckoos, and least, least, but always a welcome sight,—the ruby-throated hummingbird. With such a bewildering variety, most of them nesting right near us, the bird lover has a whole world of study before his eyes. And it is study of the life habits of our birds, not merely their identification, which constitutes real and valuable research these days.

You turn your eyes away from the bushes and trees, and lo, the whole forest floor is carpeted with flowers, most of them perhaps unknown to you. Do you recognize the white, seven-petalled flower of the bloodroot when you see it? How about the two Solomon's seals? The monk's hood of the purple aconite, the delicate crown of the columbine, the blue spike of the lupine? There is pleasure in all these, to him with eyes in his head and an understanding mind. Our only pitcher plant, too. Most of the nepenthes are found in the tropics, but in any moist swamp you will find ours, with green pitchers nearly a foot long and heavy umbels of deep magenta flowers. Wild geranium,—cranesbill; did you know that the root of him is a grand specific for diarrhoea in camp, from drinking too much rooty brook water? Nearly all our wild flowers have medicinal values, well worth knowing in case your medicine kit is exhausted or forgotten. Golden seal, blood root, mandrake, mullein, the eupatoriums, a tea of any of them is good as anything bought in a drug store, if you know how to make medicines of them as the Indians did.

The water world, too, is most absorbing by June. Every pond has its teeming life; the fly season for trout is in its glory, and the bass and pike opening dates nearly at hand. You must know Nature to enjoy her. Your trees are doing wonderful things, right now, some in flowers, others as the maples and ashes already in seed; liriodendron a mass of pale yellow tulips, the oaks and birches hanging with catkins of small flowerets, male and female flowers to be studied, how acorns are formed, where does the beech set the beechnuts that will cover the ground in autumn?—what are the fruit years for whole families of trees?—a forester has a fascinating time of it, these days!

June to me is a great month of memories. For thirty-five years I cannot recall a June that did not have at least a week's camp in it, so as to be



Taking the canoe along on a trailer made of an old Ford chassis.

living out in the midst of all these wonders. It is in June that I can rise up and say, "I believe in the Church of God. It is here, all around me, mighty, purposeful, moving on to some certain end which no man can fathom, but moving. I can see it whole from here. Christ, the Buddha, Mahomet, Confucius, these are the prophets of this living God, each with his message for all the sections of mankind. Each is doing well, but behind them all, behind all creeds and sects, is this Church of God, to which all men will come in the end. Five hundred million men follow the Buddha; three hundred million the Christ; two hundred million Mahomet; an hundred million Confucius. It is all good, in its way; some day they all will penetrate to the beauty and simplicity of just knowing God Himself, casting aside all creeds as outworn, and finding here in the works of God the nature of the Being who made it all."

Yes, the Answer that Omar vainly sought is here, plain to him who lives in the outdoors. Man has a place in this world of God's, but he is a bit arrogant about that place at present. Already I see the majestic march of the Fourth Glaciation, which will sweep most of man's present works and prides and the complacencies of his labors from the face of the earth. June is not what it was forty years ago, yet an infinitesimal lapse of time. In fact today July is the better camping month, for June is not settled into the business of summer yet, as it used to be. We get unheard-of cold spells, long weeks of rain, not much of the old balminess. A straw;—but it points out to the discerning mind the advance of the glaciers southward again, which three times in only this last geologic age has swept our river bottoms clean. Can you see such anthills as New York, and Chicago, and Boston moved bodily into the sea by those walls of ice, six hundred feet high, which will come, do what we will? A thousand years, maybe, but, in God's judgment, the earth needs another glacial housecleaning. Our river valleys are too small and narrow; we have wasted our tree life beyond all endurance; our balance of rainfall is badly upset. Twice before man has moved south before the advancing glaciers, thereby learning something of his own relative unimportance in the general scheme of things. In my humble opinion never before has he done more to invite a fourth glaciation as during the last six centuries.

But this is a matter of the slow minutes of the years, in which a man's lifetime is but as that of the fly. We have what remains of the woods yet; the only practical point in it is that today July is the better camping month. Our fish laws have advanced to that date also, in the most progressive states, opening for bass and pickerel on July 1st. Memories and bass together lead me to reflections on tents, and on lakes to pitch them beside. You may elect a lone hike; or one with one or two good fellows, each with his own outfit and doing his own cooking; or you may prefer to take the girl partner of your life along, and you two have a sort of honeymoon amid the fresh wonders of nature and the delights of bass fishing. Let us treat here, briefly, of these three schemes for your outing:

It is a cynical commentary on human nature that the fellow who can cook good square meals from ordinary trail provender is sure to have more than his share of camp labors thrust upon him. The others forget that he, too, likes his quiet hours out on the burnished lake, his times for reflective and observant wanderings through the woods, pipe in mouth and mind keenly interested in all that Nature is doing around him. But chores pile up, until he finds himself a sort of glorified and unpaid chef for the whole camp. Such a good fellow may find a way out by devising a lone hiking outfit and striking off for himself, where he will have plenty of leisure and may take a whole day in working around one mountain flank if he so desires. He is free from the time-schedule demanded by four hungry men. He may not eat at all, if so moved, or he may eat any time, taking not twenty minutes over the business. His pack does not weigh thirty pounds altogether including a week's grub. He can jump off at any old valley in the hills and just wander, visiting lakes and streams in the region, stopping a few days here, a day there. . . . .

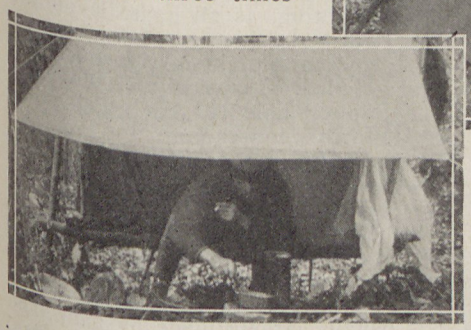
I like such camps to have a maximum of comfort. A light 6x9 ft. tarp weighing 24 ounces; a 6 ft. by 22 inch stretcher bed with the sides seamed in a wide hem which makes a pocket for side poles; a light sleeping bag; a change of clothes; a light rubber raincoat weighing 19 ounces; grub bags; a one-man cooking kit; belt axe, rod case, reels and lures; a can of worms; a candle lantern; a piece of mosquito netting four feet square, and the list is done. Grub, about thirteen pounds for a week, assuming that your meat is mostly fish provided by the rods.

With such an outfit you pick out any likely looking locality on the map, where the contour lines show much hilly country and there are streams and lakes. You get off at some lonely station in the forested hills. You hike up a mountain trail and arrive at a bassy lake. The

(Continued on page 558)

The handy tent, a good one for man and wife.

The ideal tent for a bass fishing party.



At the left—Stretcher bed tent for the lone hiker.

June for lake trout.

Game Rifles

Edited by
M. L. GOCHENOUR

Shotgun Actions

By CHARLES NEWTON

FOR centuries the ingenuity of both makers and users of firearms has been and still is devoted to solving the problems connected with the insertion of a charge in the breech of a gun as a preliminary to firing it out of the muzzle. Up to about sixty years ago the principal question was the proper confinement of the gas developed during this most interesting period, that its force might not be wasted by being discharged through the joints of the breech, and that the uncomfortable and inconvenient features of such discharge might be eliminated. This was solved in the adoption of metallic ammunition, and since that time the same energy and ingenuity has been devoted, with equal enthusiasm, to the problem of closing the breech after the insertion of the cartridge in such manner as will give the greatest strength, combined with lightness, ease, convenience and quickness of operation, and permanence of results; in other words, durability of mechanism.

Hundreds, more likely thousands, of devices have been brought forth for this purpose, many of them useful but more of them impractical. Most of the former class have been incorporated into modern arms in various forms, some permanently and some temporarily.

The conditions governing the use of firearms for sporting purposes in Europe and in America are so different that two distinct methods, we might say, "schools," of gunmaking have been developed, in the case of both the rifle and the shotgun; and it is with the latter only that this article will deal.

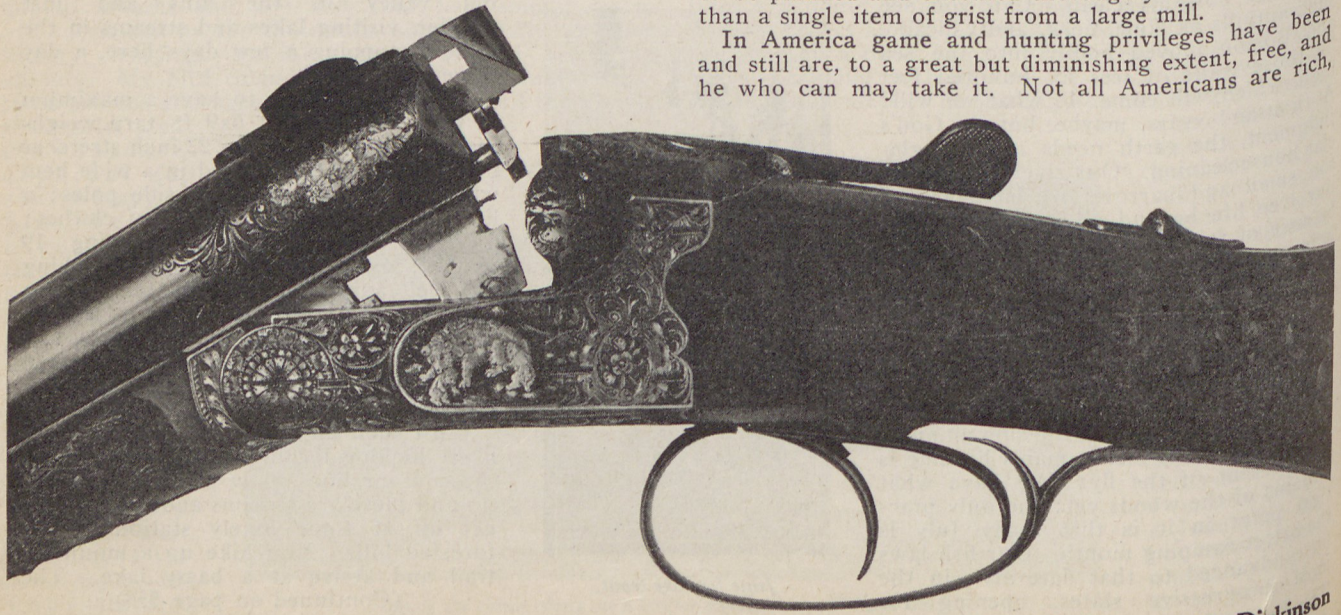
THE author of this manuscript on Shotgun Actions needs no introduction to the readers of gun and ammunition literature. He has earned the gratitude of American Riflemen by his excellent contributions to our better, ultra-high velocity big game rifles. His new "Buffalo Newton" is a masterpiece that commends investigation, but he modestly avoids all mention of it in this article.

It is to be hoped that many American manufacturers will give serious consideration to the improvements here suggested in actions for double barreled shotgun actions. The days of pump and automatic scatter-guns are numbered, and with their passing must come a revival of attention to better design of the double gun as made on this side of the Atlantic. Such is the pioneering spirit in which this treatise was written and offered!

That the method of closing the breech and retaining, throughout the effective life of the weapon, its original solidity of closure, has not as yet been absolutely perfected, at least in America, is evidenced by the different articles appearing in the columns of the sporting press during the past few years. These show that "compensating devices" by which the wear upon the joints of a gun having a hinged barrel may be "taken up" are still matters worthy of the attention not only of the "crank" and inventor, but of the gunmaker as well. Likewise, that this particular millennium is not yet at hand. It is largely in this matter that the European and American "schools" of gunmakers differ. We will briefly compare the two.

As above stated, the conditions governing sport at home and abroad are radically different, and this difference in conditions is responsible for the difference in methods. Abroad only those who are well off in this world's goods can use a sporting weapon at all. The comparatively poor cannot obtain the privilege of shooting, as all game is on private lands from which the general public is rigorously excluded. Those who do shoot are amply able to pay good prices for their weapons, and consider quality rather than price. To them cheapness is no recommendation for a gun, rather a cause for suspicion. Therefore the attention of the foreign gunmaker, making goods for use rather than export, is devoted to producing the best possible gun, that is the strongest gun, almost regardless of cost. Hence it is usually largely made by hand, and each separate gun is a separate, individual undertaking, to be planned and executed thoroughly and well, rather than a single item of grist from a large mill.

In America game and hunting privileges have been and still are, to a great but diminishing extent, free, and he who can may take it. Not all Americans are rich,



and the farmer's boy who can scrape together but a few dollars therefore wants a gun just as badly, if not more so, than his more wealthy cousin across the sea, and he frequently does just as good work with it. All classes in America contribute their quota to swell the ranks of the sportsmen, and as the majority are not able to invest in an expensive gun, the demand is for the cheaper goods which they can afford. This condition has resulted in the production of the American machine-made gun, which is sold at all prices, from the close, hard-shooting, single barreled at $5.00 or thereabouts, to the de luxe production at $500.00 or over, and which will not shoot a whit better. The American demand being for cheap guns necessarily involves machine-made guns, and this, in turn, involves guns which can be practically entirely turned out by machinery. No device, however meritorious, which involves hand work can be used upon an American gun; the paramount demand for cheapness forbids it. Hence the broad distinction between the two "schools" of gunmaking.

Close-up of three barreled action.

Admirers of the foreign guns from time to time state their preferences in the magazines, and immediately many enthusiastic sportsmen who have used American guns to their own complete satisfaction for years rally to the defense. Most of them bring to bear on the subject a good deal of experience with the American weapon and the enthusiasm inspired not only by their affection for the gun of their choice, but by an intense patriotism. Few of these, however, have had any experience with a first-class foreign weapon; in fact, few of them know just what are the points of difference between the two, except that one has undergone a sea voyage and had an import duty paid upon it, and the other has not. Therefore, it would seem that a discussion of the actual differences in construction of the two types might be just as interesting as the usual outbursts of patriotism and testimonies to the fact that either this or that type will shoot and not burst.

The fact that a certain gun will shoot or has shot a certain number of rounds without becoming loose in the joints proves only its own endurance; it proves it neither superior nor inferior to another gun, unless we have a record of the other gun when submitted to similar treatment. We can decide the relative merits of two guns only after trying both, never by trying only one; or by examining both, not by examining but one. Therefore, we will consider the actual structural differences between the two types.

The locking mechanism of a double barreled shotgun is charged with the duty of resisting strains, primarily, in three directions, viz.: first, the forward thrust upon the barrels, tending to drive them forward and away from the standing breech; second, the upward thrust on the breech of the barrels, tending to open the gun; and third, the side wrench, caused by firing a barrel, the center of thrust of which is at one side of the center of resistance, tending to throw the breech toward the side of the gun on which the barrel fired is located, and naturally, whipping the muzzle in the opposite direction. The hinge pin is the pivot upon which this strain works, and it is responsible for many a loose action. The true functions of the extension rib is to take up this side wrench, thus relieving the lug and hinge pin of much of the strain.

We will see not only how the two types of gun differ but how this difference enables them to meet these three primary strains.

The mechanism of all locking systems separates itself into two primary parts, the under lugs and the extension rib. These should be considered separately.

"Beginning at the bottom" and considering first the under lugs we find our first great difference. The European maker uses two separate lugs, placed tandem. The arrangement is shown by the accompanying cut of the breeches of two guns made for the writer by Fred Adolph. One is a three-barreled and the other a 20-gauge shotgun. The best shotguns are made on the "demi-bloc" system in which both the lower lugs and the extension rib are of one piece with the barrel, being milled from the same piece of steel instead of being brazed on. One-half of each lug and of the extension rib is a part of each barrel, the joint between them when they are brazed together being through the exact center of both lugs and rib. The lugs of the three-barreled gun are a part of the rifle barrel, while the two halves of the extension rib are parts of the shot barrels as shown in the cut.

In mounting the barrels the forward lug fits against the hinge pin the same as in our domestic guns. The rear lug, it will be noticed, has its forward face concaved slightly; it is almost a perfect arc of a circle, having the center of the hinge pin as its center. Note we said "almost." The lower end of this curve is a trifle to the rear of the position of a perfect arc. This lug shuts down behind and beds against a solid steel shoulder which is a part of the receiver, and as it draws down into place it draws the barrels firmly back against the standing breech and keeps them there. It relieves the forward lug and hinge pin of all strain of discharge. The frame might be sawed completely off opposite the forward lug and this rear lug would still hold the gun solidly together under stress of firing. It takes up the whole of the forward thrust exerted "below decks." If, however, there should occur the slightest give, wear, or set of this lug in use, then the forward lug bedded against the hinge pin is there as a ready reinforcement, called into action immediately upon the slightest "give" of the rear lug; and this forward lug alone has the same strength as the complete American action. Saw entirely off the rear, or principal, lug of this action, and then compare it with the Fox gun, or with the Ithaca or Smith, considering that the rear lug of the Ithaca has no bearing on its forward end. But, we say, if the single bearing on the hinge pin has proved strong enough, as it has, why this superfluous strength? Has it? Why all these compensating devices? Every American factory advertises them as an advantage. You cannot buy a new American gun the top lever of which stands in the center of the gun. They all stand at an angle to the right, ready to come over as the gun wears, ready to take up the slack; and it is necessary. Why not, then, take up the wear on the foreign gun? We will see.

Lay a flat piece of machinery steel on an anvil. Smooth off the head of a cold chisel until it is perfectly flat. Place the edge of the cold chisel on the steel and strike it a heavy blow with a sledge; then notice the cut in the steel. Now place the head of the chisel on the steel and strike it on the edge, not one but one hundred blows of equal force to the one first struck; then look for the indentation in the plate; you will not find it. The force of the blows has been distributed over so large an area that the amount applied at any one place is insufficient to disarrange the molecules of the steel plate, while, when the edge of the chisel was in contact, the total energy was concentrated upon a slight area and a cut was the result. The principle is the same as a snowshoe—increasing the resistance by increasing the area of surface in contact.

(Continued on page 561)

Arms Failures in Bush and Field

When Gun or Ammunition Failed

By HUNTERS OF THE LEAGUE
Edited by M. L. GOCHENOUR

A. E. Swoyer, of Honesdale, Pa., repeats this month with a re-entry, which he calls, "A Mysterious Double." Certainly, Brother Swoyer, this story cannot be classified as an arms failure, but the incident finds favor on account of the antiquated weapon which made your double possible. With apologies to Harold Pulsifer, "Skelly" should have informed you instanter that "the guy that caught that fish was a ———liar."

I NEVER had a hunting rivalry of the nature that I had with a friend whom I will call Skelly, mainly because that isn't his name. Skelly was never so happy as when the grouse rose wild and he could punch them with his full-choked twelve when they were out of reach of my little twenty; when he could cut in on my shot, or wipe my eye when I was tangled up in thick cover. Naturally, when I had the opportunity, I wished Skelly many happy returns and did my best to reciprocate. All of which leads up to a peculiar hunting "accident."

We were approaching a little clump of willows, when Skelly, who was in the lead, flushed a woodcock. Now woodcock are scarce in our country and as this happened to be the first that Skelly had even seen, he shot two feet under on the rise, and a foot over as the rocket of the marshes dropped with a derisive whistle in the swamp. Nevertheless, "Got him!" announced Skelly.

"All right. Go and pick him up, then!" was my rejoinder.

"I wouldn't go into that swamp for all the woodcock in the county," Skelly demurred.

This attitude proved Skelly's undoing. "That woodcock is as safe as a lion in a den of Daniels, and you know it, Skell. But I'm darned if I'll let a miserable little 'cock' have the laugh on an old friend—I'll go in and kill him for you."

Stepping into the willows, I flushed Mr. Woodcock within fifty yards and crumpled him neatly. I marked the bird closely, for the cover was very thick, and stepped forward; at the third step, my foot touched something soft and looking down I found that I had kicked a rabbit who was lying in his form and by one of those freaks of fortune often met with by the hunter and killed him instantly. I stuffed the bunny into my pocket, retrieved and pocketed the woodcock, and rejoined Skelly, who had been watching the proceedings from the hillside.

"Did you get him?"

"Sure!"

"Well, let's see him," demanded Skelly, who on all such occasions has to be shown. I pulled out the rabbit and laid it down before the skeptic. Skelly's eyes bulged out like a pair of billiard balls—he had seen the flash of my gun and knew that I had shot at a rising bird, but because of the thick brush had missed the other details. He felt the rabbit, but could find no grounds for suspicion—there was no doubt that bunny had just been killed.

"Oh, down in the swamp a ways. He was sitting on a limb sunning himself and I bumped him off."

"But I thought that you were after that woodcock."

"Where did you get that?"

"So I was, Skell!" And I laid the woodcock alongside the rabbit.

The poor fellow was puzzled. He knew that I had shot but once, and that that shot was not at anything on the ground; and of course he knew that rabbits do not make a practice of sitting around in trees.

"That," I told him soberly, "is the way a real hunter goes about it. I was watching that rabbit on the limb when the woodcock flushed. I wanted to save powder and 'help win the war,' so I waited until the two were in line and pulled. It's simple when you know how."

Skelly eyed the woodcock, the rabbit and myself with impartial disgust. "Oh, you go to h—l!" he muttered, bitterly. And, unless he happens to read this, he will never know the real "how" of that "double."

From Menominee, Michigan, comes an aftermath of J. A. Bottkol, which bears eloquent testimony that James Oliver Curwood's crusade and missionary work among we killers have borne fruit. When hard-boiled hunters, with such wealth of experience as that possessed by Brother Bottkol, are converted to the cause, something worth while has been accomplished. Welcome the President of the Menominee Sportsmen's Association! May your fellow converts be legion! More power to your versatile typewriter!

DEER hunting in Northern Michigan has furnished my keenest enjoyment and most restful relaxation since my first hunt as a stripling of sixteen.

In the prongs of spreading buck-horns in my den rest six rifles of early and late manufacture, each in the pink of condition and trimmed with the fittings according to the ideas of a genuine gun-crank. These six rifles, during twenty-four years of deer hunting, have accounted for over one hundred deer. This is the penitent confession of a slaughterer who has left the ranks of the "killers" and has become a member of the Izaak Walton League.

For twelve years I had used a model 1895 .30 U. S. Winchester with good results, but one day in 1916, about a week before going on my annual hunt, I read an account of an elk hunt by Mr. Ralph Edmunds, in "Outdoor Life," in which he spoke in glowing terms of the wonderful accuracy, speed, range and killing powers of the Ross 280. I was fascinated by Mr. Edmund's fine work on both elk and sheep and of course I had to have a Ross 280.

The rifle reached me the day before my departure for my hunting grounds in the Fence and Deer River region. Prior to 1920, for abundance of deer and topography, no finer deer hunting territory was to be found anywhere.

Having arrived at the camp of my good friend, Mitchell Dykes, at noon the day before the season opened, I had time to try out the Ross at various ranges, slow fire, and also emptied it twice at rapid fire from the shoulder to get the feel and hang of it in action. The rifle was then cleaned, the bore oiled, and I felt confident of the morrow, the opening day.

Dawn found me removing the oil from the bore, but when I reached in my pack-sack for a box of cartridges I found that the cardboard box containing the ammunition had given away in the eight-mile ride over the frozen wagon road, and emptied its contents among the extra clothing and sundry articles. I fished out the shells and found the cartridge cases covered with lint and other foreign matter which had stuck to their greased surface. I wiped them clean, put a shell in the breech, and filled the magazine.

I was soon on my way south across Fence River, hunting thru some hardwood timber and pine choppings. About noon, while quietly skirting some hardwood on my left at the edge of a pine-chopping on my right, I caught just the faintest momentary glimpse and

The many thoughtful expressions of appreciation for these hunting stories that fell upon the ears of the editor during the historic First National Convention of the League, were proof conclusive that the efforts of the contributors have not been in vain, prizes or no prizes. You fellows who have thus far been content to let the other fellow do the work now owe us your arms failures and hunting tragedies, be they great or small. Many Waltonians, nationally known in industry, trade or profession, if not indeed as sportsmen, have volunteered the cheering belief that this contest has done more for cleaner, better sportsmanship among the Nimrods of America than any amount of inspired propaganda might have accomplished. To those who have already obliged this department, occasion is taken to say that re-entry is not only permissible, but welcome, and will continue to be so long as the brotherhood that owns this magazine demands more of these pointed hunting tales.

M. L. G.

whisk of a whitetail over the brush on a slight rise about one hundred yards ahead.

I made my way carefully to the top of the knoll but found I could not see very far because of small pin-cherry, black-cherry, and poplar trees. After scanning the surroundings, I quietly clambered to the top of a big pine stump, to which I had directed my course and which raised my elevation about five feet, thus gaining a vantage point which enabled me to scan thoroughly the surroundings and to look over the more distant territory with my glasses. On a side hill about six hundred yards to the west the binoculars revealed a doe standing in some "poples," and looking in my direction.

"There's the deer, old man," I soliloquized, "that skipped out from this place when it saw you coming. Hang the luck, why isn't it a buck so you could try your new rifle?" Mrs. Doe presently gave a few shrill "whistles" and bounded nimbly over the top of the ridge, "blowing" the while.

I had covered about four miles since leaving camp and as I had done so at a slow, careful stalk, I felt somewhat fatigued and elected to remain standing on the stump a few minutes longer to watch and rest.

The mellow sunlight of late autumn shone brightly over the forestland, turning to molten silver the quiet surface of a nearby beaver pond, while over all, in all, and thru all rested the solemn, nerve-shooting, entrancing tranquillity of the Northland.

To my left in the maple timber a flock of partridge, that had "frozen" unseen at my approach and waited for me to pass, began stealing away with clucks and tail jerks; Canada Jays fluttered by, uttering sweet, almost plaintive whistles; high over head two ravens, sentinels of the North, wheeled in wide circles, croaking anon their weird calls.

So profound is the untraversed stillness of the North Woods that the notes and calls of its wild things serve but to heighten the stillness. These notes and calls (even rifle shots) seem like memories of long ago the moment after they are uttered or their echoes die.

Here, indeed, lay the majestic splendor of the Silent Places. It's a wonderful country—almost mountainous if you like—dotted with spring-fed, sparkling lakes, seamed with clear, swift-flowing streams, covered with magnificent primeval belts of maple, miles in extent, vast areas of lonely pine-barrens, forbidding spruce and cedar swamps, brooding marshes—all criss-crossed with innumerable trails made by the white-tail deer and the varied lesser wild life of the Northland.

I was gazing at a maple forest in the purple distance into which the doe had headed, when lo! a big buck came bounding over the windfalls from the south, shaping his course in the direction the doe had taken. He was as large, if not larger, than any deer I had ever shot or seen, and I marked with elation that he sported a magnificent set of antlers. "Whiskers! Grey-Face! at last!" flashed thru my mind. These were the local names of a big buck occasionally seen by hunters in this remote territory for several years, but at his noble highness no hunter had had the good fortune of a shot. I saw that his course would take him across my front, and as he had not seen me, I let him come on.

When he had reached a point in front of me which would bring him almost broadside to the shortest distance, which was about ninety yards, I drew down with cool and careful aim just back of the big shoulders while he was in mid-air, and let off. Simultaneously with the crack of the rifle I saw that the bullet had not touched its target. I was astonished—the alignment had seemed perfect when I fired. The buck stopped at the end of his next jump, standing broadside, head poised high, ears twitching, trying to ascertain in which direction the danger lay. The polished surface of his spreading, rugged, craggy horns flashed momentarily in the sunlight as he slowly moved his head. At the discharge of the rifle I hooked my index finger over the bolt-handle and pulled back but the bolt did not move—I pulled with all my strength. Not a budge! I dropped the butt from my shoulder into the crook of my right elbow to give greater purchase, and pulled with all my might. Not a click! The action seemed locked as tightly as a vise. During these precious seconds I had tried to watch the buck and saw, that when I lowered the rifle from my shoulder, his keen eye for motion caught the movement and I knew he would be off very soon. In desperation, I placed the butt of the rifle on a stump. The buck turned at the same instant and bounded away at his greatest speed, back in the direction from which he had come. I brought my heel smartly down on the bolt-handle. Not a rattle! My heart sank. I raised my foot again and with all the force I could muster I brought my rubber heel squarely down on the bolt-handle. The bolt clattered back and the sticking case was ejected. I grabbed up the rifle, slammed the bolt forward with a fresh cartridge, but it was too late—the big buck of the Deer River region, "Whiskers! Grey-Face!" had sagaciously dropped out of sight into a friendly valley.

You who have been there know how I felt, then, and for a long time afterward, for the most pitiful part of a failure is that it might have been avoided. I did not have the "buck fever" when I fired the shot and missed but I did have a new rifle with a new trigger-pull, open rear-sight and I who had always used Lyman Rear Peeps on all my other rifles should have heeded common prudence and should also have studied my Ross more minutely. If only I had regreased the cartridge cases after wiping them clean, the Ross, with its big charge of powder and weak extracting power due to the straight-pull bolt, would not have failed me. I fired many shots from the Ross during the next three years and made some long range kills but had no more trouble with sticking shells because I was careful to keep the cases greased with a thin film of mobilubricant.

It is a little thing to be careful to acquire complete knowledge of the rifle with which you are to shoot or hunt—but a big thing if, thru neglect, a fine trophy, a hand, an eye, or a life is lost. Carelessness is the advance agent of the nearly all failures and accidents and the ounce of prevention is worth pounds of regrets. The failures usually bring forcibly to mind that it was not the rifle or ammunition, but the personal equation that was responsible for failure.

The high-power rifle of today is a wonderful instrument of precision but sometimes we take too much for granted and we overlook the fact that the manufacturer cannot imbue the arm with human intelligence to adapt itself to all circumstances and render service in all conditions.

In times of success, men become careless. In times of failure, distress and sorrow they think and learn. Failure brings them to a realization that failure and misfortune are due usually to their own stupidity.

I write this narrative with the hope that it will help some of the younger hunters who have not as yet the knowledge of years of experience behind them. It will remind them never to be too sure of themselves and will warn them to know their rifles and ammunition and to be always mindful of the little as well as the big things. "Trifles make perfection but perfection is no trifle."

Yet is there for every failure and woe of the lover of woodland sports an inner antidote. In these after years it is comforting to know that, tho he of the big body and massive horns was lost to me on that November day, and seen by a few wayfarers of the silent places since, no hunter's bullet ever scored on the big buck. I hope he still lives and roams the romantic fastnesses between Deer and Fence Rivers, or, if he is ended and gone, that he lived to a ripe old age and died a natural and peaceful death in a favorite secluded retreat in his forest homeland at eventide of a perfect June day, when all nature was vocal with the songs of wild birds.

As I sit back in my chair and look up at the beautiful heads on the walls I feel a keen regret and remorse over my many years of insatiate killing. But as with Jim Curwood: "The mounted heads in my home are no longer crowned with the grandeur of trophies, but rather with the nobility of martyrs." My heads, too, Jim, talk to me. And I commune with them and reassure them that I, too, like you, will fight for them. I am going to put back what I took.

As I grow older I feel, and I know that all those who belong to the clan of this altruistic League feel the same: that all of hunting is not in killing. As the seasons pass we care less for that which we may kill, and correspondingly more for the mystic commingling with Nature and the perpetuation of our game so that it may contribute to the health, comfort, and happiness of mankind.

"One thing at a time, and that done well." Do you remember when we used to write that old adage in our copy books? John Reider, of South Westville, New Jersey, remembers it very well now. If you have any doubt of it, entertain yourself with his delightful little reminiscence.

THE New Jersey hunting season opens on the 10th of November, and the fishing season ends on the 30th of November. About the middle of November, as I was getting ready to go gunning the next day, my wife told me I had better go fishing as I usually had better luck as an angler. Then I conceived the brilliant (?) idea of trying to do both. Accordingly, I took both gun and fishing tackle along.

The next morning I arrived at Malaga, New Jersey, early, and made a bee-line for the lake, loading my gun on the way. As I came to the shore, a Coopers hawk flew up and started to cross the lake. It took both barrels to stop him. As he hit the water, a big pike rose and struck at him with a mighty splash.

I leaned the gun against a nearby tree, and hastily assembled my tackle. Using a small spinner with a pork strip,

(Continued on page 564)

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Angling Memories

By MEMBERS OF THE LEAGUE

Edited by WILL H. DILG

Every Fisherman Has at Least One Good Fishing Story in His System

Sketches by R. Feyerweather Babcock

ANGLER Fred G. Tripp has an "Angling Memory" in this issue entitled: "Lost—One Rod, Reel, Line and Trout." He begins his story as follows: "I am rather an amateur at the fishing game, yet I have many memories of small mouth black bass in Massachusetts, and the speckled trout and landlocked salmon in Maine."

So you see, my brother, it makes no difference whether you are a dyed-in-the-wool grey-headed veteran angler or just a beginner—you have your angling memories, and just like all the rest of us you treasure them and live them over again year in and year out.

One of the chief reasons why angling is the greatest game in the world is because anglers have memories to a larger and finer degree than have the devotees of any other sport. From the beginning of time, when fishermen get together it is as certain as that two and two added together makes four that someone has got to tell one of his angling memories, and usually he is interrupted by some other impatient angler who has got to "bust in" with his particular pet fishing memory.

I have always believed that every fisherman has at least one good fishing story in his system and that he can write it so that it will be highly interesting to the average angler. None of the readers of this magazine can tell me that they are the exception to the rule, because I know differently, and here the thought occurs to me that if I could meet each one of you separately—and it is a cinch that we would soon get to talking fish—I would discover that every mother's son of you has a real honest to God fishing story which is fit to print in this magazine. Now, then, why not write it and do your bit to help this magazine become the most friendly magazine in the world?

I am going to expect to hear from you, my brother, right soon and with a story too. Come on, boys, lets go.

The Five Prizes

The first prize will be a fifty dollar fly or bait casting rod, or your choice of any reel either for bait casting or fly rod. The second prize will be an Eastman Kodak—not a cheap affair but a really fine one. The third prize will be an autographed copy of "Fisherman's Luck," by Dr. Henry Van Dyke, an autographed copy of "The Book of the Black Bass," by Dr. James A. Henshall, and an autographed copy of "Tales of Fishes" by Zane Grey. The fourth and fifth prizes have not been decided upon, but they will be worth having, that's certain.

The Five Judges

Judge George V. Triplett, Owensboro, Ky. Famous Green River Kentucky fisherman.

R. C. Grey, Catalina Island. Noted fresh and salt water angler.

W. L. Brann, New York City. Devotee of light tackle and noted fly fisherman.

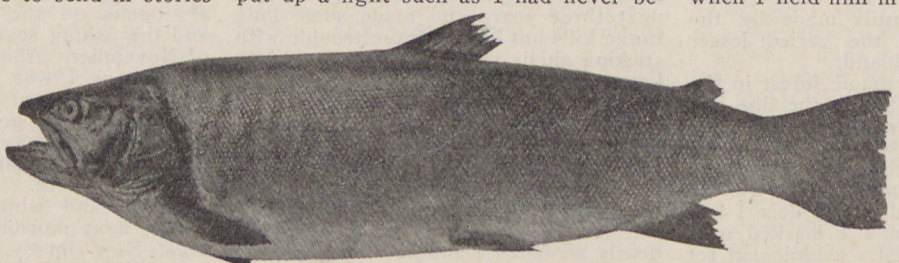
E. C. Kemper, Washington, D. C. Distinguished executive and lover of angling.

Lionel Phillips, Belleville, N. J. Lover of sports afield and astream.

A Record "Dolly Varden"

By W. A. CONE

I AM not qualified to write a good story, but after having read in your valuable publication, with a great amount of pleasure and interest, the articles on "Angling Memories" and seeing that you ask your readers to send in stories of their experience in fishing and hunting, I thought I would venture to write you of one of my recollections, the memory of which will always be with me. This occurred something like ten years ago. I was up at Lake Sunapee enjoying a vacation and trout fishing, and my friend George Graham, with whom I had been fishing many times with good success, asked me if I would not like to go the following day and try our luck trolling, and I gladly approved of his suggestion. We were out early in the morning and, after catching some smelt for bait, we trolled for several hours without any success and we were getting discouraged as it was a very hot day. We concluded, however, to try another section of the lake before going home. We were in a small power boat, George running the boat and I doing the fishing. We had not been there long before my hook caught on something which I supposed must be a snag or grass on the bottom, as we were in comparatively shallow water, and I asked him to stop the boat as my hook was caught. He did so and then I began to feel my line running out, which assured me that I had hold of something much more interesting than the bottom of the lake, and I struck and hooked the fish which immediately put up a fight such as I had never before experienced. He took out nearly all the line on my reel before I dared to snub him, then came to the surface and made the water fairly boil, and I supposed I had hooked a big salmon, although he did not jump out of the water like a salmon but I did not believe that any trout ever lived that was as large as the fish I had hold of. I reeled him in as carefully as I could. Several times he was somewhat contrary and I had to let him go his way, for I determined I would get him if it was a possible thing and I knew that the only way to do it was to handle him carefully and tire him out. When I would get him up near the boat and he saw the landing net he would at once make a whirl and off he would go, taking fifty feet or more line. However, he finally came to the net exhausted and we landed him, but when I went to take the hook out of his mouth he was so strong that he came very near getting away from me. I would not believe it possible for a fish of his size to have the strength that he showed when I held him in my hands. He was 31 inches long and well proportioned and weighed a little over 13 lbs. Was one of the species known as "Dolly Varden" Trout, a can of which had been brought from Scotland about ten years before and planted in the lake. I was using a medium weight steel rod and a King Fisher Line. I enclose a picture of my trout. I have him mounted and hung up in my dining room, where he is, at least in my opinion, the most attractive object in the room! I should be happy to show him to any one who may doubt my story.



Photograph of Mr. Cone's 13 lb. trout. Length 31 inches.

"Fish and Game Cannot Vote"—Judge J. M. Dickinson

My First "Lunge"

By GEORGE S. ERVING

IT was nearing dawn, but as yet the streaks of grey had not appeared, and the earth lay covered with the cold, damp mist peculiar to the Great Lakes region. Into this quiet scene there burst the wild scream of an alarm clock. The same clock, that would be knocked off the bedside table in winter, in the summer is welcomed for its call, for does it not begin a day of untold joy?

Before the clock had half finished its story, I was out of bed and dressed. Then I started to sort my tackle, but I finally ended by taking it all. Who knows what fish like?

Next I went to the bath tub, which I had full of the liveliest shiners I ever laid eyes on. It had been mighty hard to keep them there. The whole family raised a kick, but what's a bath tub for in a summer resort if not to keep bait in? They all went bathing in the lake, what more did they want? It surely was hard work getting the minnows out and despite my efforts two slippery little fellows slid through my fingers and down the drain.

This finished my preparations and I started off to get my friend. When I got to his house he was still in bed. He was very mad, for it's a disgrace for a fisherman to sleep overtime, so he took it out on his wife, and she being a quiet creature, and knowing that her husband's honor was at stake, took the blame.

An hour later we were at the lake.

It was a beautiful morning. The drowsy birds twittered in the reeds and a huge bass did us the honor to leap in the path of the rising sun, covering the oil-smooth surface with foam. I drank all these beauties in, and I'm sure I added a year to my life.

We reached our favorite spot and commenced to fish. There was perfect silence, except for the splash of an occasional turtle who would slip off his log and into the water as we drifted past. Then my friend stood up. His line was running off his reel with a slow steady motion. It stopped. I thought he had become entangled in the weeds and was now free. Suddenly the line started again. Then Ed jerked; his line made a hissing sound as it sped through the many guides on the fly rod. The water split and out rushed a huge lunge. He was a monster—thirteen pounds of bronze scales and steel muscles. How he rushed and leaped! My mouth was agape for I had never seen a lunge before. Then in his fury he came towards the boat. I saw him coming and pushed our bass net under the water. He rushed into it; I felt his weight and slid him into the boat. Even after my veteran pal had stabbed him and forever quieted him, I couldn't move. I had often read of fellows who had caught lunge, but I thought I was too unlucky to ever see one caught.

The hours passed and we had had no strikes by noon. Then we drifted into some weeds which skirted a pile of brush. My friend had begun to paddle out of the weeds when my reel handle began to turn, not with the fast movement characteristic of the bass, but rather the slow, easy movement of the lunge. I began to feel myself weaken. What would a lunge do to my little Heddon bass rod! The line went off ten, twenty, thirty feet, and then stopped. I waited for fully five seconds and then, being able to stand it no longer, I struck. The rod went under the water and the place of the reel handle was a milkish blur. I brought down my thumb on the reel but only burned it. The line was nearly gone when the fish stopped, turned and sped towards the boat. I could not reel in the line fast enough and he broke water twice before I gained on him. Then while I was slowly reeling and pumping him towards the boat the line slacked. My heart sank and I commenced to slowly reel in the line. Then my rod bent under the boat. He was still on. Quickly I swerved the rod around the back of the boat and brought it into a graceful arch. As soon as I put pressure on the line the musky shot under the boat again, and again I miraculously saved my rod by swinging it around the back of the boat. Then he went for deeper water. Here he sulked and I couldn't move him. The boat moved along the line until he was directly below. Then I pumped him to the surface. Here he made a long rush but it lacked the speed of the others. I gained some line, and then some more. The white flashes from his stomach became more frequent until I finally led him alongside of the boat, belly up.

My friend slid the net under him and he was mine.

I didn't know what to do, but I finally grabbed my pal's hand and he had enough sense to shake it. From that time on he has been my best friend. There is a brotherliness between two angling pals not found anywhere else.

That night on the way home, with our two lunge and a bass we had caught later in the day, we told all over again the experiences of the day and a score of times we told how we had lost the three lunge in the afternoon.

Never did I come up the road to camp with my spirits or my vanity keyed to a higher pitch, and with a lunge in each hand, I went from friend to friend telling each one the whole story.

That night as I lay in bed at the close of my most perfect day I thanked the Giver of All Good Things for such a day. And, friends, I am still young and hope to have many more such experiences, and I want you older men, some experienced leaders, to start a Chapter of the League in Pittsburgh. It's a city full of fishermen, all brothers.

Lost—One Rod, Reel, Line and Trout

By FRED G. TRIPP

I AM rather an amateur at the fishing game, yet I have many memories of small mouth black bass in Massachusetts, and the speckled trout and landlocked salmon in Maine.

This is the first tale I have tried to write since I was a student at our local high school. I was never much good in English and much worse as a speller, and I guess my old English teacher would laugh if she knew I was attempting this article.

However, one of the dearest fishing memories I have is of a fishing trip on Demnin Mountain Pond with my old pal Jimmie Stevens. Jimmie and I went to Baker's Siding, about fifty miles north of Madison, Me., for a three weeks' fishing trip. We had spent two-thirds of our time fishing the near-by ponds and streams with fine results with trout and fair with salmon, but no very large ones. One night we got to talking with a guide who had a shack near our place, and he told us of a pond we hadn't fished on the very top of Demnin Mountain where he said he thought we might get a few big ones. The next day saw us starting bright and early. We hiked about a mile to Baker's Pond, rowed across, hiked another mile or so to Big Demnin Pond, where I left Jimmie to fish and started out to find and follow the trail to Demnin Mt. Pond. After a half hour of difficult climbing I came upon one of the most beautiful ponds I have ever had the pleasure of seeing, and right in the heart of God's own country. Perhaps Zane Grey could describe it but I wouldn't dare try.

After scouting around a bit I found an old boat turned bottom side up under some bushes. It must have been a good boat in its day, but by its looks its day had passed. The calking was hanging loose in several places and there were a couple of small holes in it. It was too difficult a task for me to try casting from the shore so I turned back down the trail with a resolve to get some tar, pitch, or something, and return next day to try and patch up the old boat and try my luck. The next morning I started off early all alone with "repair kit" and lunch. After a strenuous trip I arrived at my destination and endeavored to administer first aid to the wreck. When the job was finished I assembled my rod and net, and put the boat in the water. She leaked like a sieve, as the saying goes, but I hadn't gone to all my trouble for nothing and I was resolved to try it anyway.

I bailed out as best I could, shoved off, rowed out a bit, bailed again, and rowed some more playing my line out as I rowed. I hadn't played out more than eight or ten yards when I got a most vicious strike. The water was getting pretty plentiful in the boat and coming in all the time, but when I saw that fish break water all thought of bailing departed. My eyes were all for Mr. Trout. He looked to me as though he would sure go five or six pounds. After playing him a short while I became aware of a cold and clammy feeling about my legs. Looking down I saw the water was getting close to the top of the boat and the top of the boat pretty close to the water. I guess I became a little nervous, anyway the first thing I knew I was in the water keeping company with the fish. Gee, but that water was cold. I'm not what one would call a strong swimmer but after parting with my highly prized rod I managed somehow to make shore. The next day my pal and I had to leave for Taunton and as far as I know there is a perfectly good rod, reel, hook, line and sinker at the bottom of Demnin Mountain Pond. As long as I haven't hold of one end of the line I hope Mr. Trout hasn't hold of the other end, but I shall surely always remember with a thrill the too short time he did have hold of it.

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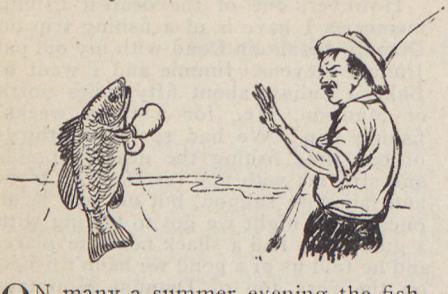
"Bacon for Breakfast"

By FRED M. WILSON



ON many a summer evening the fishing pal (who happens also to be the wife) and I, climb into the old khaki and with rods and tackle box, hike the two and one-half miles to the little artificial lake, work the shore, weed beds and other likely places conscientiously for two hours, and then hike back home, usually fishless, always tired, hungry and happy. Occasionally, if we happen to be fish hungry and it is our luck to land a particularly nice one, we have bass next morning for breakfast.

On the particular evening I have in mind, we arrived at the water just at sundown, and rigging up the old tackle, proceeded to get busy with as little delay as possible. The Pal waded into the edge of the lake and began casting past some willows which hung out over the shallow water while I walked down the shore and selected a stretch of water clear of rushes and willows, but thickly weeded for 30 feet out from the waterline. A southwest wind had, during the day, blown the weeds inshore and past the edge of the weeds was clear water.

I waded noiselessly and slowly a few feet out from the bank, waited motionlessly for 3 or 4 minutes, and then wafted a No. 2 Hildebrandt gently over the edge of the weeds into the clear water—"Zang," as though he had been waiting there for hours for that very lure, he took it, and a right neat little battle he gave me, too, considering his size. I guessed him at 11 inches, slipped him back into the water, and again wafted the spinner over the edge of the weeds—"Zowie," another one just like him, and time after time, 18 of them, all of a pattern (or it may have been the same one, for all one could tell) until the wife, having no luck herself, and noticing what I was about, came down the bank to watch the fun.

You know the time of day—the poets call it the "gloaming"—still light in the western sky, not a breath of air and the lake as quiet and smooth as stretched satin. I raised the rod correctly (I was getting chesty and was, by this time, practicing very fancy form) and with just the proper wrist movement, placed the spoon and feathers in the geometrical center of a little pocket in the weeds not 20 feet away—"Zambo," and I knew, without being told, that this fellow was no relation whatever to the little fellows who had been having so much fun with me, and I with them. He ran, stopped, broke water, and raced the other way until the line fairly whistled as it cut the water—and there was yours truly with a 4-ounce bamboo, a 5-pound tournament line which I often use when fishing entirely for fun and not for fish (which is 99 44/100 of the time) and a 1-0 hook fastened on to a whopper. The chills were chasing one another up and down my back and my temperature was about 104, but I was careful and, after a time, the old boy got tired of playing and gave up, and I tagged him and he was "it." I lifted him out of the water and carried him ashore. The wife was making noises which I took to be expressions of admiration, mostly for the fish. I was trying to untie the stringer from my belt with my right hand; with the left I was holding several pounds (my estimate and my wife's vary) of regular fish against my stomach. It certainly was the w. k. psychological moment. Suddenly that old whopper's body grew tense; quicker than thought, he curled up his tail and brought it down like a pile driver right in the solar plexus, and the next instant I was holding my tummy with both hands, gasping for breath, and that wonder fish, taken on a spider web, with a rod which many plug casters had told me "wasn't fit to fish with," was leaving for parts unknown. The wife stood speechless for a second, then burst into peals of laughter, and when she had recovered her breath, and I mine, said, "Well, come on, dear, it's dark; let's go. We have bacon for breakfast, anyway."

The Difference Between 'Em

By C. R. BOLLER

UP to the time of my marriage little more than ten years ago, I had been a baseball fiend and all my spare time went to baseball or football, consequently aside from experience acquired, as a very small lad, in the art of hooking sunfish and bullheads, I knew very little of the art of angling; not even the difference between the despised carp and a black bass, and thereby hangs this tale.

Soon after the birth of a son, I began to feel my responsibility as a father, and cast about for some more dignified form of sport more befitting a family man, something to keep a man in touch with nature and the big outdoors. What sport was more appropriate than fishing?

Yes, that was to be it, fishing, so the following week-end found the good wife and myself alighting from an interurban trolley car, some ten miles north of the city with a large basket of lunch, a hammock, and a small baby and all the fishing tackle, with a two-mile walk ahead to a creek, where I was to be exposed to and infected by the fishing fever, from which I have never recovered.

I selected a grassy bank with much white clover interspersed and a large maple tree for shade as a most likely place to spend the day. My tackle consisted of a jointed bamboo rod, a piece of cutty-hunk line, no reel, and worms for bait; my tackle being more an excuse to get out of doors than tackle!

Between eating, reading and baiting my hook the day soon passed, and as the time drew on I decided I would have a look at a pool that attracted my notice by the peculiar way the willows and driftwood had combined to form it and as I peeped over the bank into the pool, it seemed to be alive with the churning of some kind of fish, though from my limited experience I did not know what kind they were. I had caught, years before, sun fish, red horse, channel cat and suckers, and I knew that it was not any of these. Carp I had never caught, as they were practically unknown in our waters when I last fished, and so I supposed that it was carp that I was looking at. I went back to the hammock, got my rod (or pole?) and found there was only one worm in the can. I decided that I would catch one of these big "carp." Slipping up over the bank, I let the worm drop into the water where it had no sooner landed, than splash! and one of the big boys hit, and so did I on my end of the line, and I proceeded to land him in a very unfishermanlike way. Throwing the rod behind me, I grabbed the line in my hands and pulled him up hand over hand and there he lay on the grass at my feet, four pounds if he weighed an ounce.

He had swallowed my last worm, and in my ignorance I gave up for the day. I packed up and we were soon on our way to the interurban station, with the BIG-BOY wrapped in a newspaper, as I had no desire to be "kidded" about bringing home a carp, and not even knowing whether or not it was a carp. At the station the newspaper became torn and a stranger spying a fin sticking through the paper asked: "What did you catch?" I hardly dared to show my ignorance by saying, "I don't know," so I made a random guess. "It's a carp." "That doesn't look like a carp fin to me," the stranger replied. "Care if I look?" To which I replied, "No, go ahead and look." After removing the newspaper, he looked up with a grin. "I calls that a black bass, and a durned good one at that." He started to wrap him up again, but I stopped him with the remark to not bother, as I could carry him on the string much better. The stranger winked and grinned! What did I care for that grin, I had caught a black bass and the spell it cast over me I knew would last forever.

As I walked the last stretch home I felt that a thousand eyes were on me and a thousand lips were murmuring, "Ah, a black bass." I've since caught a good many varieties of fish and know all that swim hereabouts, but when it comes to seeing as many bass in one pool again and as anxious to be caught as these bass were—well, leave that to a tenderfoot, as such things will never happen to a regular dyed-in-the-wool angler as I sort of profess to be at present.

It seems that fate rather reserved this treat for me as an initiation ceremony to THE ORDER OF ANGLERS, and I think it took, for I've fished many a day that brought nary a bite and went the next day fully confident that I was to run into another school of bass or pike, if not then the next time, and I believe as Dr. Bradley says, "that fishing is the one thing from which you can expect to get much and yet receive less and still come back with more of than any other thing under the sun."

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"Fish and Game Cannot Vote"—Judge J. M. Dickinson

The Disastrous Results of Pollution

(Continued from page 523)

quite a fair volume of pollution. Today this is evidently no longer possible, for many of the river banks are strewn with decomposing matter, which during the warm weather is an excellent breeding-ground for deadly germs.

There is food for thought, too, in our health report figures.

In 1921 there were 26 cases of infantile paralysis and 9 deaths in New York City. In Boston there were 26 cases and 4 deaths from the same cause, while in Philadelphia there were 3 cases and 2 deaths. It appears that where pollution of coast waters is heaviest some diseases are most frequent.

Since the publication of my former article a new slight form of epidemic has made its appearance in another small community at Hillsdale, New Jersey, which has a population of 1,500. It is said to be due to pollution of streams, and from three hundred to three hundred and fifty cases have been treated. The stream claimed to be polluted runs through the town, and one-half of a mile below its boundary the Hackensack Water Company gets the water and uses and distributes it for use.

One can hardly conceive being more complacently cradled in a septic tank than under such conditions.

These rumbling warnings must be heeded before something worse happens. And it is surely stretching the point to extremes to yield to the suggestive intimations of some all-wise legislator that when something in the nature of a serious calamity takes place it will be time enough to enact laws to curb the pollution evil.

Not only was nothing done to remedy this serious state of affairs caused by the defilement of our coast and inland waters by oil tar, and the like before the National Coast Anti-Pollution League began its activity, but the conditions were growing worse, while no organized efforts were made to halt or eradicate them, and a recent movement to check the progress met with frustration.

When in 1921 the first bill to prevent further oil pollution was introduced at the Sixty-seventh Session of Congress, violent objections came from manufacturers in one State, who feared the cost of cleaning up.

It seems rather a sad commentary on our highly prized "industrial progress" to allow what would amount to a comparatively small outlay right now to stand in the way of our National well-being.

I wonder how long these objecting gentlemen would maintain their attitude if they were compelled to place their children under a physician's care as a result of an afternoon's swim in a polluted stream?

Let us consider what remedies we have. They are very few, if any at all exist, and inadequate.

There is not in existence today any Federal act which provides penalties for defilement of coastal waters by oil pollution. The War Department is powerless in the matter.

State laws are also woefully inadequate.

In New York and Pennsylvania, as in most other states, the conservation departments are likewise powerless to stop stream pollution by court procedure. Unless it can be definitely established that the death of fish is the direct result of pollution from the factory of which it is sought to hold the owners liable, the prosecution against them must fall.

For example: The Conservation Law of New York (Section 247) provides that none of the industrial wastes named therein "or other deleterious or poisonous substances shall be thrown or allowed to run into any waters, either private or public, in quantities injurious to fish life inhabiting the same, or injurious to the propagation of fish therein." This is also the Penal Law.

The scope of this provision has been held by the Appellate Division of the Supreme Court in the case of People versus La Pell to mean that the prohibition against throwing sawdust and shavings into a stream does not prevent the destruction of a stream as a spawning ground, but only its pollution by such deleterious materials in quantities sufficient to destroy fish, and this has been followed by other decisions, both in New York and other States, to the same effect.

In civil proceedings to enjoin such pollutions, where the offending mill is located some distance away from the landowner who complains, the operators cannot be restrained unless the proof to which reference has just been made is forthcoming, and the actions generally fail.

In the city of Mobile, Alabama, Dock Commissioner Hartwell, one of the Executive Committee of the National Coast Anti-Pollution League, is rigidly enforcing a city ordinance which imposes both imprisonment and fine as penalty for polluting the river there, and that punishment has already been meted out to some offenders, and other cities will soon follow suit.

Shortly after the opening of the Sixty-seventh Session of Congress in the fall of 1921 Senator Frelinghuysen, of New Jersey, introduced and had passed in the United States Senate a bill which dealt comprehensively with the matter. This was the same bill which the National Coast Anti-Pollution League urged for passage in the House. It was known as the Oil-Pollution Bill. It was introduced in Congress by Representative Appleby, and finally reported out favorably by the Rivers and Harbors Committee, ordered on the calendar and printed.

The League was anxious for the enactment of this bill into law, as indeed was every one interested, for it provided sufficient safeguards and penalties for its violations. It represented the first effective Federal step toward the abatement of the pollution evil. And it gave ample time for compliance with its terms by providing that it should become operative three months after its passage.

However, through the continued opposition of one man who at that time was the Acting Speaker of the House of Representatives, the bill was not even allowed to be voted on. Senator Frelinghuysen has publicly stated that the failure of this legislation is deplorable. It will again be introduced at the next session in December.

Public sentiment is gradually awakening to the dangers of this water pollution and supporters for this proposed legislation are rallying from every part of the United States.

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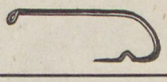

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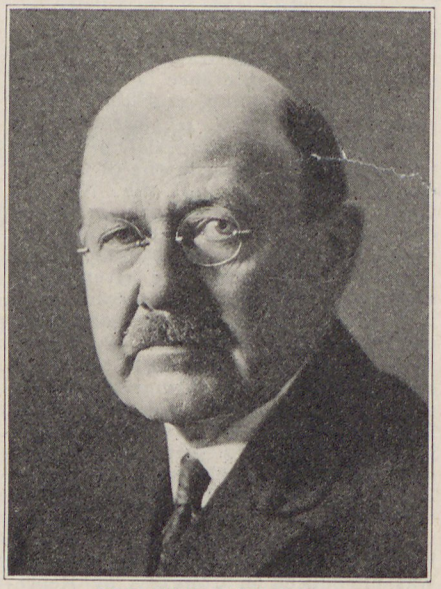

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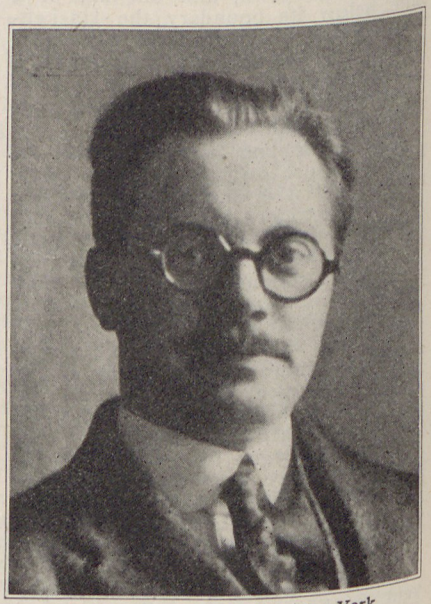

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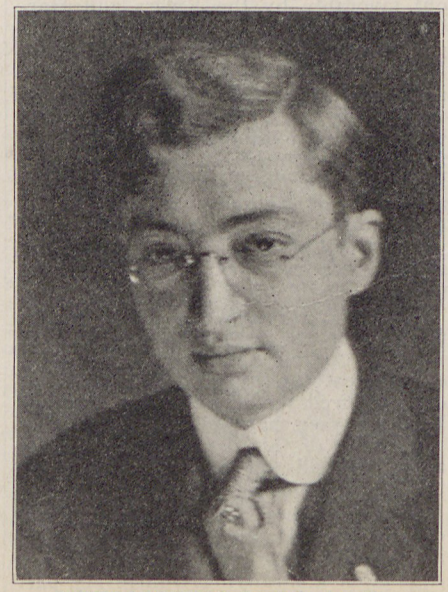

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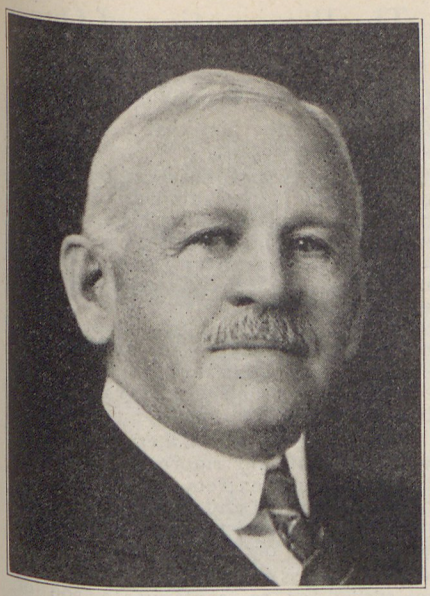
"Fish and Game Cannot Vote"—Judge J. M. Dickinson



GEORGE R. SKINNER
Vice-President—Chicago Chapter

WILL CHAPMAN
President—Lac du Flambeau Chapter

The Black Bass

(Continued from page 507)

of the lily pads and swift waters and his mate to our admiration and magnanimity.

Is it not regrettable, therefore, when these splendid game fish are guarding their spawn, and when they are not feeding, that the pot-fishermen, knowing the habits of the fish, drag many-hooked plug baits over their spawning beds, tempting them to attack the deadly lures, not for food, but in order to drive them away from their nests and their young, and in that way land and kill the bass, and thus destroy the school of orphaned fry?

This is an ignoble and murderous method of fishing, and should be despised by all sportsmen and severely punished by the law.

The spawning season in waters north of Tennessee lasts from about April 15th to June 15th, and from south of Tennessee from about February 1st to April 1st. Let the bass alone during those periods, and be a true sportsman, and one of God Almighty's gentlemen!

Chapter Doesn't Wait for New Fish Laws

NOT satisfied to wait until the state of Illinois places upon its statute books a law closing the season on black bass until the spawning period is ended Will County Chapter, Izaak Walton League of America, came into possession of a lake of 100 acres, stocked it and closed it for an indefinite period.

There will be no fishing in the lake until expert investigation shows conditions are favorable and there will be no fishing at any future time until spawning is completely finished. The open season will be regulated in the lake by climatic conditions. A late spring will mean a late open season.

Lake Renwick, through the co-operation of P. F. McManus, general superintendent of the E. J. & E. Railway, was turned over to Will County Chapter. Five hundred adult black bass were placed in the lake last winter.

Will County Chapter also has under way the project of establishing a black bass hatchery in Pilcher Park, formerly the Forest of Arden, the famous Higinbotham estate. The Chapter, of which Joliet is headquarters, has a membership close to 1,000. Dr. G. D. Webb is president, Dr. Thomas Mulford, vice-president, M. S. Heiss, secretary, George Blackburn, treasurer, and the board of directors is composed of the officers and W. B. Kemp, Arch Jeffrey, W. S. Wolf, Harry Green and George Scheibner.

Mr. Herbert Bradley, who accompanied Carl Ackley on his recent successful quest for the vanishing African gorillas, delivered a lecture and showed motion pictures and slides at the last meeting of the chapter.

Dogs, Game Birds and Sportsmen

(Continued from page 531)

We continued for perhaps a half mile. The view spread out for miles. Down in the valleys extending to hill-topped sky-line, the purple haze, gold edged by the sun, hung lazy in its royal splendor. We stopped, lost in the glory of it all.

Said Son: "Dad, it seems to me that God's great Out-of-Doors is the big thing on hunting and fishing trips. I guess that's what it means to men like Dan Beard and Henry Van Dyke."

I was brought back from reverent contemplation of the beautiful view below me, by the sound to the left of me of "toight, toight, toight."

I turned and took a step, and as I did so, partridge started rising, one or two at a time. The first was a straight-away, and a novice could have nailed him. Then one on my left, and a "left-quarter" has always been easy for me. I hastily reloaded my gun. The next bird flushed to my right which I disgracefully missed. Then another straight-a-way which a blind man could have shot.

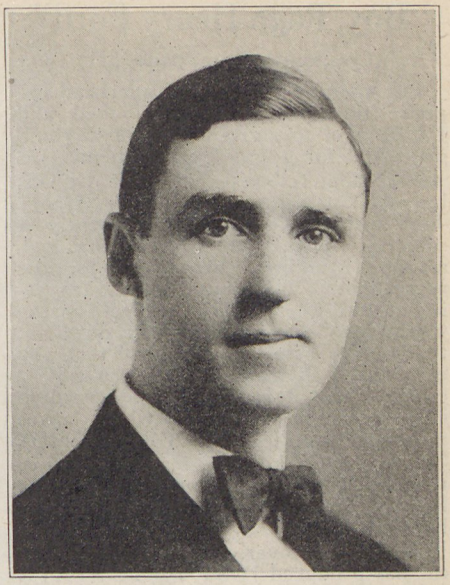
Four birds and we had our limit. It had all happened so quickly that I had thoughtlessly and selfishly "hogged the show."

SCORE
Dad .....Seven
Son .....Three

But Dad had hunted for twenty years and it was Son's first partridge hunt. So to Son belonged the honors. Game law limit, five partridge per hunter per day, time two thirty p. m., so we put our guns over our shoulders and went back to the Bridges' comfortable home, there to relate the story of the hunt and again relive it in our dreams.

I felt keenly ashamed over not having given Son more shots and told him so. But oh, I was proud of him for the lesson he taught me in the spontaneous and unselfish delight he took in watching me shoot when he did not, and the joy with which he hailed each good shot of mine.

That night as we snuggled down into one of "Ma" Bridges' wonderful feather beds, Son's arm crept up over my shoulder and he said, "Let's forget how many birds either of us shot today and who shot which. That doesn't really count. But didn't we have a glorious time?" Then a pause and: "Let's start early tomorrow and cook our own lunch up on the 'Hog Back,' there where the view's so fine." Another pause and finally with arm tightening about my shoulder, a sleepy "good night, Dad." God bless him!



W. L. FARLEY
President—Huntley, Illinois, Chapter

HANLEY W. CONE
Secretary—Chillicothe, Ohio, Chapter

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"Boy, Page Henry Ford"

(Continued from page 511)

But there is an item of overhead expense that you have overlooked and I'll be glad to show it to you if you'll go fishin' for goggle-eyes with me.

This item is bugs—just plain BUGS; but spell it with capital letters, Henry—be sure to do that, for presently it will be Front Page News in big, red, all-cap headlines broadcast to the world. Why? Because BUGS are going to be the biggest subject in the world very soon unless you do a lot to cover this item of overhead that you overlooked in making the Ford car so effective that it has become the vacuum cleaner of the wilderness which leaves no living thing—but BUGS—behind it.

Where you kill the birds and leave the BUGS there you make it possible for the Bugs to overwhelm humanity by destroying all crops.

Think that over, Henry. The Ford car has produced JUST THAT STATE OF AFFAIRS TODAY.

What good will your car be tomorrow with nothing to haul, nothing to raise, nothing to live on and a road crawling under your wheels? Overdrawn? Not a bit! I'm telling you the truth. I'll show it to you if you'll come fishin' with me for I can show you in one day more than I could write in a year—and will be glad to. Will you come?

Most of all, Henry, Outdoor America needs your common sense and we men who have been fighting for her wild places and wild things believe we could convince you that you'd like to spend a million dollars a year from now on, and enjoy doing it, Henry, to protect and propagate more game and fish to replace what the Ford car has taken away. This would make a fair start at stemming the growth of the bug borde but you must have help even then—much help.

You must have restrictive law and hatcheries, hand in hand with protection, law enforcement, education and public sentiment if you can continue to make Ford cars and live in the land that uses them. There is no middle course.

I know you'll agree with me. I can point out to you the truth if you go fishin' with me; will you come?

The Izaak Walton League of America is ready for you to join it and to help you repopulate the land. You'll have many men with you—two million or more in a year or so and their money and their energy and their patriotism will be added to yours through this organization of principled sportsmen, and I tell you personally, and on my own responsibility, that your check, payable to the league, for a million dollars a year, will do as much as you can do to put back the Lost Legions. Furthermore it would be a good investment as I'll show you if you'll come and go fishin' with me. Will you come?

Brook Trout Hatchery FOR SALE

320 Acres in Price County, Wis., with Spring Fed Lake and facilities for trout and other fish hatchery. Lake now stocked with speckled trout. An opportunity to obtain all or part ownership for development and a wonderful exclusive and seclusive summer home at a small investment.

B. E. BALCZYNSKI
1935 So. Michigan Ave., Chicago, Illinois

The Preservation of Our Streams and Lakes

(Continued from page 523)

ignorance of the fact that he is a carrier of these germs.

We need social insistence that the ethical code of the summer resort and of the fishing fraternity in matters of sanitation should conform as far as possible to the sanitary standards demanded by modern civilization. The essential feature underlying these standards is the adequate disposal of human excreta. This disposal involves the destruction of human excreta by rotting out in sewage disposal systems, by burning or by deep burial.

To this end, the fisherman of the wilderness should rigorously see to it that all human excreta at his camp are buried or burned and that they are permitted, in no case, to pollute the waters of the stream or lake.

Carelessness in this matter is liable to spread or to contaminate soil or water not only with the germs of typhoid fever but also with those of dysentery, hookworm, and other intestinal worms.

The germs of dysentery are discharged in human excreta, survive carriage by flies, may pass undestroyed through their digestive tracts, and may be carried from excreta exposed even in the wilderness by the fly to food or water or distributed weeks or months later by the rain into the water of the stream or lake. Prompt and efficient disposal of excreta in the wilderness camp is a safeguard not only for the occupants but for other fishermen who travel the same trail or camp along the same stream, or drink from the same spring.

The summer resort presents a different problem in sanitation from that which confronts the fisherman of the wilderness. The responsibility for sanitation, in this instance, rests upon the host rather than upon the guest. For the control of the premises and the provision of facilities for sewage disposal are clearly the responsibility of the former. The danger of soil and stream pollution about the summer resort is increased directly wtih the numbers of persons in the locality and the degree of pollution tends to increase year by year with the returning summer population unless suitable provision is made for the disposal of excreta. Such provision is found in septic tanks which can be installed at relatively small expense. These tanks are so constructed that human sewage, when the tank is properly operated, is completely rotted out, its organic material destroyed and its disease germs are, to a very large extent, if not wholly, killed in the rotting process. The outflow from such septic tanks can be safely distributed in the fields and allowed to filter into the streams without resulting pollution of the waters therein. It is possible in this way to preserve the soil and the streams from contaminations which spread disease and death in their wake. There is a wonderful opportunity for the angling fraternity to assist in the establishment of modern scientific standards of sewage disposal, and by this means to help in the preservation of the wilderness, of the streams and lakes, and of our summer resorts from pollution.

THE AUTHOR
Mr. Paine is a member of the Izaak Walton League.

Says Your Own Magazine:

"**The Tent-Dwellers** has delighted thousands and thousands. If there are any who have not already read that great outdoor book they should immediately read it."
—*Izaak Walton League Monthly.*

The Tent-Dwellers

By Albert Bigelow Paine

Do you enjoy riotous company—and fishing? Would you like a vacation in the Nova Scotia Woods with two of the best fellows in the world? Of course you would! You can start tonight. Get a copy of Albert Bigelow Paine's "The Tent-Dwellers" and in fifteen minutes you are paddling up a wild Nova Scotia river, with a long vista of sport-filled days ahead of you. Mr. Paine is a fisherman by predilection and a writer by profession. Since Izaak Walton of blessed memory, there has been no one better equipped to write of the joys of the gentle art than this humor-loving enthusiast. Fish a stream with him tonight!

"He was swearing steadily and I think still blaming me for most of his troubles."—Page 83.

From Your Bookseller or Direct from the Publisher $2.25

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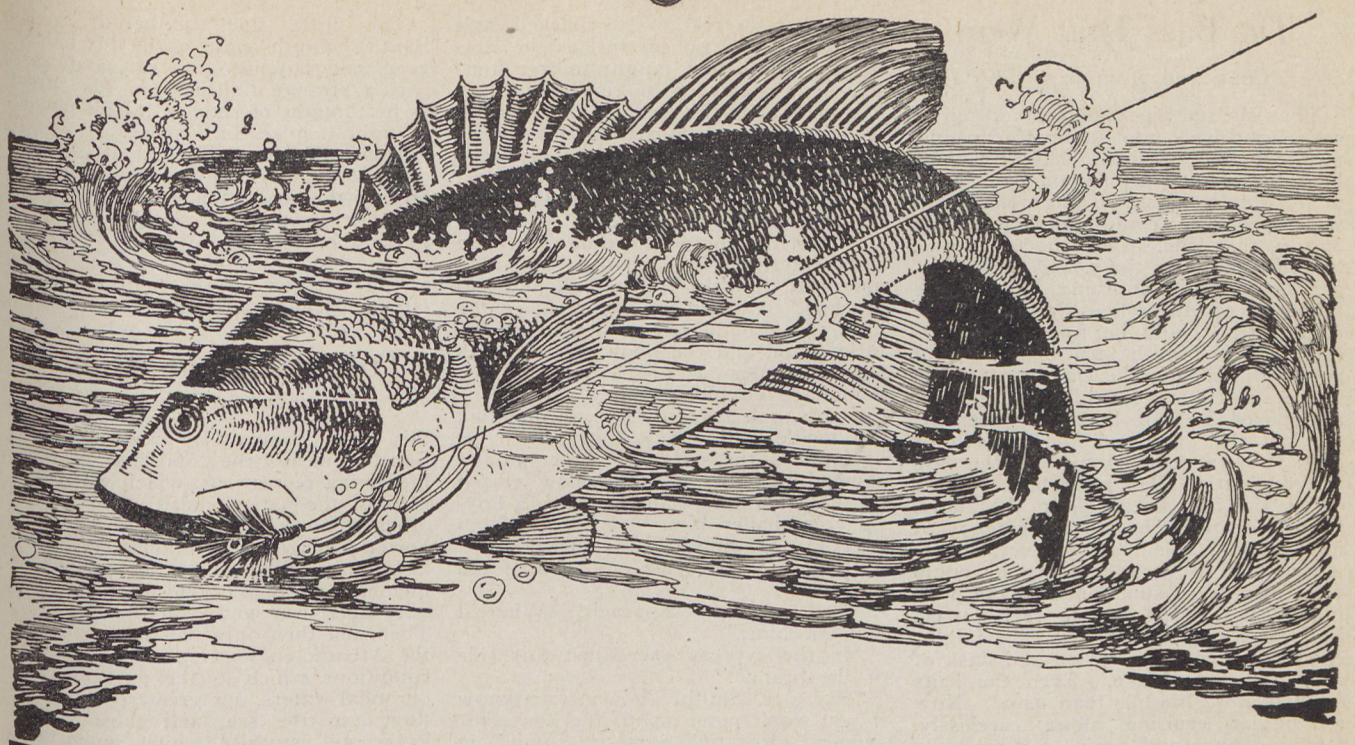
HARPER & BROTHERS NEW YORK

"Fish and Game Cannot Vote"—Judge J. M. Dickinson



"It's a Beauty"—

A Northern Wisconsin Product

There is some joy in feeling one of these beauties on the end of your line—to let out your line to his tug—to play him carefully and finally land him.

The waters of this Izaak Walton paradise teem with gamey fish—bass, pike, trout, salmon, muskellunge, etc.; they await a line from you. Then there is health besides—sunburned, "brown as a berry" health that makes you young again and fills you with energy for work when you return home.

All this you can get on a fishing junket to the ***Great North Country.***

The Fisherman's Special

Operated on fast schedule, leaves Chicago, Union Station, daily at 6:30 P.M., Central Time, arriving at the North Country early the following morning. Returning, this train leaves at a convenient hour in the evening, arriving in Chicago 8:35 the following morning.

Tickets, reservations, descriptive booklets, etc., at City Ticket Office, 179 W. Jackson Blvd. Phone Wabash 4600

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Chicago Milwaukee & St. Paul Railway

TO PUGET SOUND - ELECTRIFIED

The Bass That Were

(Continued from page 529)

Then the old pipe and another cup of coffee, and back into the boat. No time now for one of those delightful lazy hours when one lay flat on one's back

after rush were gently checked and turned, the rod tip curtsied as the bass turned side-to and fought to free himself by a series of lunging jerks, and trembled and quivered in its rainbow arch as he flung himself to the surface and shook like a tarpon. This gave Smith his first g[illegible]

The little lines gathered around Smith's mouth again as he lifted bass, gear, and boy into the car, and there was a strange tightness in his throat as he thought of sixteen gallant pounds of fight helpless in a seine.

"Listen, buddy," he said as the boy [illegible] at the

HART SCHAFFNER & MARX

DIXIE WEAVES

[POROUS WOOLS AND WORSTEDS]

COOL AND STYLISH

It's no trick to make cool clothes; but clothes that are cool and stylish too—that's different Dixie Weaves are different; cool, porous wools and worsteds; tailored to hold their style; they're economical—no laundry bills

HART SCHAFFNER & MARX

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Also details as to cost of trip to .....

"When the Forests Go—"

Conclusion of cover editorial

towering in my woods; and the water courses and reservoirs were only pitiable phantoms of what once they had been.

And so our recording thermometers marked 56° below zero; and my forest giants died where they stood, giants that had witnessed the fury of the Iroquois in their paint.

Not all died—not even a considerable part of these ancient trees—and only a few of the first growth—some oaks, ash, and black cherry. Three men touching hands might encircle these ash and oak trees. But I am convinced that never before had climate done murder on our hardy northern trees; and that, had the vanished forests still stood, no murder would have been accomplished.

Among other details which convince me that the local climate has changed and is changing—birds formerly visiting the district visit it no more or very rarely. I may mention the Scarlet Tanager, not uncommon in my boyhood, now a rare visitor. The Brown Thrasher, the Rose-breasted Grosbeak, even the Cardinal were to be seen and heard. They are to be seen and heard no longer there.

As for butterflies—they and the moths are few compared to what once they were—few in numbers, fewer in species where once they swarmed.

In my early youth I have seen milkweed bloom covered with the beautiful Argymus Idalia. In the last thirty years I have seen only one or two in a year—some years none at all.

And once all the brilliant members of the Vanessa family were common; and all the lordly Swallowtails; and our gardens, at dusk, were full of Sphinx-moths and their feathery humming. It is different now. The Red Admiral comes but Milbert's butterfly seldom which once was so common. Turnus still lords it over the lilacs, but asterius which once jewelled acres of snowy buck-wheat bloom is no longer common.

These few, brief observations may be valueless to convince the scientist and statistician, but my friends the Local Sages and I agree that our climate has sadly changed and is still changing.

We do not lay every loss and disaster to the ruthless slaughter of our forests; we know what imported pests have done to chestnut, white pine, and oak. We know that our Red-breasted pigeons are extinct, and we suspect the reason; but why does more than arctic cold come and kill trees in our few remaining woods—trees a hundred years old?

Not long ago I stood with a Local Wise Man of great wisdom and vaster age; and I said: "Do you remember the fine Mulberry trees that grew on that spot?"

"Yes," he said, "but you might as well try to grow orange trees in this country today."

Thus, and with similar items of evidence, I am led to surmise that when the forests go, everything goes—even the climate.

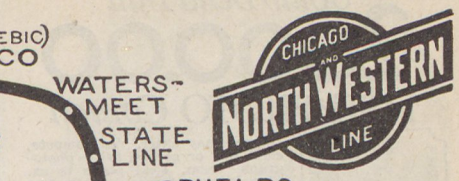
Henry van Dyke

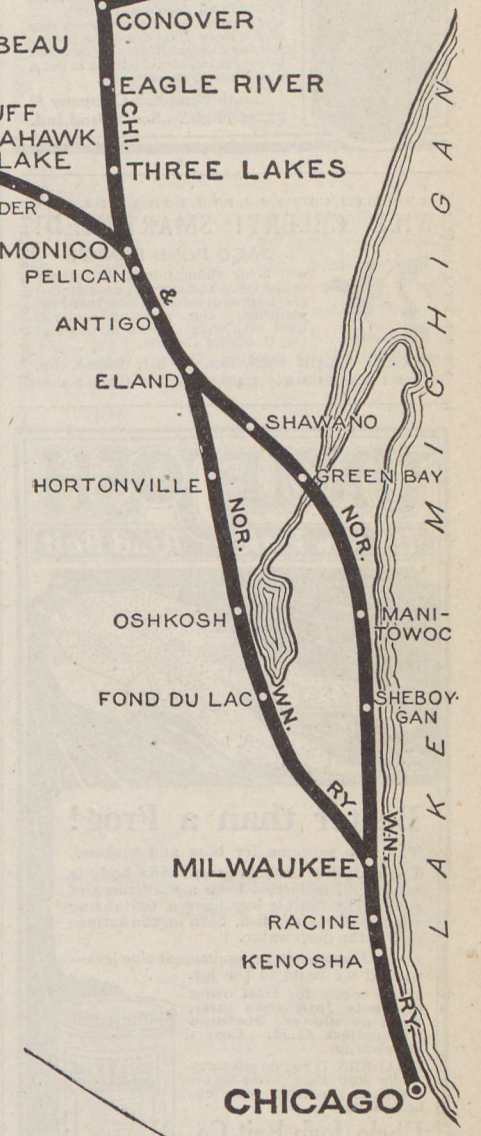
touches no subject save to make it richer under his handling. In

Companionable Books

he invites the reader to enjoy with him the good things in some of the many fine old books that have become classics—books that are the background and basis of our literature.—*Boston, Mass., Herald*

Illustrated. Cloth, $2.00; leather, $3.00. Issued in a style uniform with the author's other books.





NORTH
for the gamy ones

Wisconsin Lakes Special

to 7,000 Lakes of Northern Wisconsin and Upper Michigan

Leaves Chicago Daily except Sunday	Standard Time	Arrives Chicago Daily except Tuesday
7:00 p. m. Lv.	Chicago	Ar. 7:15 a. m.
9:15 p. m. Lv.	Milwaukee	Ar. 4:55 a. m.
6:07 a. m. Ar.	Three Lakes	Lv. 8:24 p. m.
6:38 a. m. Ar.	Eagle River	Lv. 7:54 p. m.
7:08 a. m. Ar.	Conover	Lv. 7:24 p. m.
7:45 a. m. Ar.	Phelps	Lv. 4:20 p. m. (Sundays 6:40 p m)
7:30 a. m. Ar.	State Line	Lv. 7:06 p. m.
8:00 a. m. Ar.	Watersmeet	Lv. 6:45 p. m.

Between Chicago and Watersmeet—Drawing-room, Compartment and open section Sleeping Cars, Chair Cars and **Observation-Lounging Car, serving buffet luncheon and breakfast.**

Ashland Limited	Wisconsin Lakes Special	Standard Time	Wisconsin Lakes Special	Ashland Limited
* 5:00 p. m.	† 7:00 p. m.	Lv... Chicago ..Ar.	B 7:15 a. m.	* 9:45 a. m.
7:25 p. m.	9:15 p. m.	Lv..Milwaukee..Ar.	B 4:55 a. m.	7:20 a. m.
3:52 a. m.	A 5:10 a. m.	Ar...Rhinelander..Lv.	8:25 p. m.	10:48 p. m.
f 4:30 a. m.	5:55 a. m.	Ar..Tomahawk Lake.Lv.	7:44 p. m.	f 10:12 p. m.
4:47 a. m.	6:15 a. m.	Ar.. Woodruff..Lv.	7:24 p. m.	9:57 p. m.
f 5:10 a. m.	6:40 a. m.	Ar..Lac du Flambeau.Lv.	7:00 p. m.	9:36 p. m.
f 5:33 a. m.	7:10 a. m	Ar...Manitowish..Lv.	6:26 p. m.	f 9:12 p. m.
5:45 a. m.	7:25 a. m.	Ar....Mercer...Lv.	6:14 p. m.	9:05 p. m.
†11:15 a. m.	C11:15 a. m.	Ar...Winegar..Lv.	D 1:30 p. m.	† 1:30 p. m.
6:38 a. m.	A 8:25 a. m.	Ar...Ironwood..Lv.	A 5:10 p. m.	8:20 p. m.
* 8:05 a. m.	.....	Ar...Ashland..Lv.	.....	* 6:55 p. m.

(f) Stops on signal to receive or discharge passengers. (A) Except Monday. (B) Except Tuesday.
(*) Daily. (†) Daily except Sunday. (C) On Sunday arrives Winegar 8:40 a. m.
(D) On Sunday leaves Winegar 5:10 p. m.

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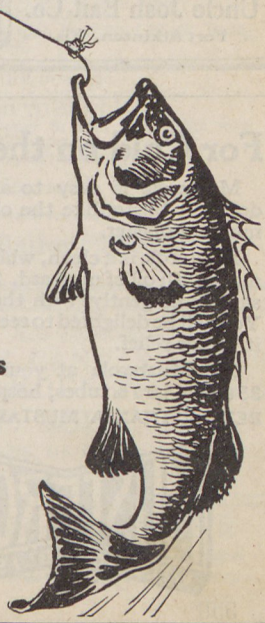

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South Bend Bait
$2000.00
FISH-PHOTO Contest

Anyone may enter. To compete, catch one or several fish — photograph them, send photo to us. There's no entrance fee. Contest now on — closes October 31st. 273 prizes in all, totaling $2,000.00. *Get further particulars from any South Bend Bait dealer by asking for our Contest Book.* Tells about prizes, rules, etc. If there is not a dealer near you, *write us.*

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SAGO POND PLANT!

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Better than a Frog!

The lure supreme for bass and pickerel. Uncle Josh's back is green. His body is white and fashioned from a solid piece of pork. His flexible legs have a tantalizing wiggle. Gets the fish, both on the surface and in the deep water.

Uncle Josh comes in convenient size jars— packed six baits to the jar.

Write today for trial order of Uncle Josh (two jars). Send no money. Postman will collect $1.25. Covers all charges.

DEALERS: If you do not carry Uncle Josh Bait, write us for details and send us your jobber's name.

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Fort Atkinson, Wis.

For Cold on the Chest

Musterole is easy to apply and it does not blister like the old-fashioned mustard plaster.

Musterole is a clean, white ointment, made with oil of mustard. Simply massage it in gently with the finger tips. You will be delighted to see how quickly it brings relief.

Get Musterole at your drug store. 35 & 65c, jars & tubes; hospital size, $3.

BETTER THAN A MUSTARD PLASTER

MUSTEROLE
WILL NOT BLISTER
REG. U.S. PAT. OFF.

One Hook Artificial Lure Sportsman's Angling Contest

Conducted by the Izaak Walton League of America and the magazine it owns and publishes

GENERAL CONDITIONS

1. Contest open to all fishermen "who feel like gentlemen and act like sportsmen." It is necessary for contestants to belong to the I. W. L. A. or to subscribe for the magazine it owns and publishes.
2. The fish must be caught with an artificial lure containing but one hook and with rod and reel.
3. Fish must be weighed and measured with a tape measure giving girth of fish (length to be taken from end of lower jaw, mouth closed, to tip of tail).
4. Each fish entered must be caught by reputable angler and must be certified to by affidavit of two reputable witnesses, which affidavit must be registered within two weeks from the date of the capture of the fish. (A drawing of the fish by placing it on paper and tracing the outline will be helpful to the judges—photos also will be helpful.)
5. It is not necessary to write a story to be published in this magazine to qualify for this contest. However, such a story will be appreciated and will be printed if well told.
6. Of course, no fish taken from private estate, or State or Federal hatchery will be considered.
7. With two or more fish weighing and measuring exactly the same, identical prizes will be awarded the contestants.
8. Competitors for the barbless medals must use a hook of the needle point type. If it is made by filing the barb from the usual hook of commerce, the point must be smooth enough to pass through a handkerchief without catching when withdrawn.
9. This contest closes December 15th, 1923.

ABOUT THE PRIZES

The first prize in each class enumerated below will (with the exception of the salt water division) be the choice of any bait or fly casting rod made in the United States.

The second prize in each class will be the choice of any reel (fly or bait casting) made in the United States.

The third prize will be a $20.00 camera, choice of manufacturer to be determined by the winner. There will be a first prize of a silver cup for each of the six classes of the sea angling division.

In addition there will be three I. W. L. A. medals for each class especially designed, bearing the name of the winner and the weight of the winning fish. The first prize winner's medal will be of solid gold, the second prize winner's medal of silver, and the third prize winner's medal of bronze. These gold, silver, and bronze prize winning medals will also be given to the winners in each of the six sea angling divisions.

In addition there will be a number of other valuable prizes donated by sportsmen for their favorite class of fish, and for signal achievements in the use of ultra light tackle, especially the use of barbless hooks. These prizes will be wading boots, rod cases, reel cases, sweaters, pipes, field glasses, and fly books, etc., etc. A list of these prizes will be given in a later issue. In no event will any prize be contributed by manufacturers of fishing tackle. Every prize offered in this One Hook Artificial Lure Contest will be a personal contribution from the donor having no interests in the sale or manufacture of articles donated.

ABOUT THE JUDGES

We have not yet decided upon all the judges for this contest. We can announce, however, that there will be judges for each separate class, and in each case ones highly competent because of their knowledge and experience of the type and species of fish which they will be appointed to judge.

AFFIDAVIT

I hereby swear to statement signed by me before two witnesses.

Kind of Fish..... Weight..... Length..... Girth.....
When caught..... Where.....
Rod used..... Reel.....
Describe one hook artificial lure used.....
Line used ..... Lure.....
Caught by (Signed).....
Street .....
City ..... State.....
Witnessed by: (Give names and addresses.)
1. .....
2. .....

This is a list of the most valuable prizes ever offered in any fishing contest

"Fish and Game Cannot Vote"—Judge J. M. Dickinson

List of Classes in Contest

And qualifications for tackle to be used by contestants

BROOKTROUT (Salvelinus fontinalis)
Caught by casting an artificial fly with appropriate fly fishing tackle and one hook lure between the legal opening and closing of the season.

BROWN TROUT (Salmo fario)
Caught by casting an artificial fly with appropriate fly fishing tackle and one hook lure between the legal opening and closing of the season.

STEELHEAD TROUT (Salmo gairdneri)
Caught by casting an artificial fly with appropriate fly fishing tackle and one hook lure between the legal opening and closing of the season.

RAINBOW TROUT (Salmo irideus)
(Eastern Division)
Caught east of the Rocky Mountains between the legal opening and closing of the season (one hook lure).

RAINBOW TROUT (Salmo irideus)
(Western Division)
Caught west of the Rocky Mountains between the official opening and closing of the season (one hook lure).

SMALL MOUTH BLACK BASS (Micropterus dolomieu)
Caught between the legal opening and closing of the season and caught in or north of New Jersey, Pennsylvania, Ohio, Indiana, Illinois, Missouri, Kansas, Colorado, Utah, Nevada and California (one hook lure).

LARGE MOUTH BLACK BASS (Micropterus salmoides)
(Northern Division)
Caught between the legal opening and closing of the season, in or north of New Jersey, Pennsylvania, Ohio, Indiana, Illinois, Missouri, Kansas, Colorado, Utah, Nevada, and California (one hook lure).

LARGE MOUTH BLACK BASS (Micropterus salmoides)
(Intermediate Division)
Caught in the States of West Virginia, Maryland, District of Columbia, Virginia, Kentucky, Tennessee, North Carolina, Delaware, Arkansas, Oklahoma, between the legal opening and closing of the season (one hook lure).

LARGE MOUTH BLACK BASS (Micropterus salmoides)
(Southern Division)
Caught in the States of South Carolina, Georgia, Alabama, Florida, Mississippi, Texas, New Mexico, Arizona, and Louisiana, between the legal opening and closing of the season (one hook lure).

SPECIAL HAROLD PULSIFER AWARDS FOR BARBLESS FISHERMEN
Special awards of gold medals will be given for the largest fish caught on a barbless fly in all of the above classes.

MUSKALLUNGE (Esox masquinongy)
Caught between the legal opening and closing of the season (one hook lure).

GREAT NORTHERN PIKE (Esox estor)
Caught between the legal opening and closing of the season (one hook lure).

WALL-EYED PIKE (Stizostedion vitreum)
Caught between the legal opening and closing of the season (one hook lure).

BLUEFISH (Pomatomus saltatrix)
Caught according to rules of Asbury Park Fishing Club (one hook lure).

WEAKFISH (Cynoscion regalis)
Caught according to rules of Asbury Park Fishing Club (one hook lure).

STRIPED BASS (Roccus lineatus)
Caught according to rules of Asbury Park Fishing Club (one hook lure).

CHANNEL BASS (Sciaenops ocellatus)
Caught according to rules of Asbury Park Fishing Club (one hook lure).

TARPON (Tarpon atlanticus)
Caught according to rules of Long Key Fishing Club (one hook lure).

TUNA (Thunnus thynnus)
Caught according to rules of Catalina Light Tackle Club (one hook lure).

When you win in this contest you may well be proud, as you will have fought and won armed with the fairest of all fair tackle, a ONE HOOK ARTIFICIAL LURE.

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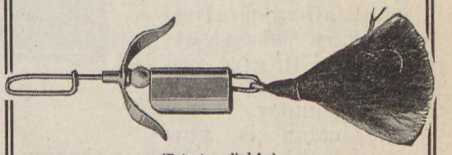

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The Best Bass, Pickerel and Muskie Getter Ever Made

Keel weight makes hook ride upright, making B-K Bait practically snag proof and weedless.
Weight being at end of lure, makes it THE IDEAL CASTING BAIT.
Can be used with Feathered Hook, Bucktail or Pork Rind.
Change hook in a few seconds without disconnecting LURE from line.
Weight made in both Copper and Nickel, A PAIR HARD TO BEAT.
Hooks feathered in Red and White with Peacock on O'Shaughnessy single hook.
No outfit complete without B-K Bait.

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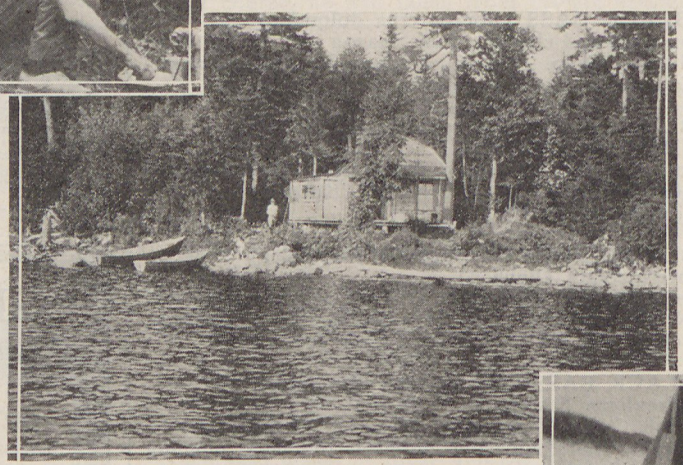
Outdoor Calendar

(Continued from page 539)

nearest thicket of thin, poley maples provides two of them twenty feet long. From the butts you cut two side poles seven feet long. The remaining poles you cut in half to make two pairs of shears seven feet long. Tie these together up near their tops and jam their feet into the duff. Run a ridge rope over them, pegging down to hold both upright and about six feet apart. Then slip your butts into the pockets of your stretcher bed and tie these side poles to the legs of the shears about a foot above the ground. Spread shears to flatten out the stretcher bed taut.

Who does not love the memory



of the little shack and the tents

Stretcher beds are notoriously cold sleeping, so lop down a few branches and pick several inches of browse to fill the bed. Over it spread out your sleeping bag, which may be just a light canvas envelope lined with one light, all-wool Hudson's Bay blanket, doubled to give you two thicknesses over and two under.

The camp is now ready for the tarp, which is thrown over the ridge rope, pegged down tight behind the stretcher bed, and guyed out in front at a gentle slope to give you a sort of verandah under which to cook and do this and that out of the rain. The stretcher bed makes a fine bench to sit upon while cooking. At night you hang over the head end of it your square of mosquito netting, stretched over a withe ring about sixteen inches in diameter so as to hang the folds clear of your face. This whole rig, so far, including tent, bed, and sleeping bag, weighs nine pounds.

My cooking outfit for this kind of camp consists of a kidney-shaped tin beer growler holding two quarts, a small folding wire grate, a tin mixing pan, an oval aluminum baker 9x7x1½ inches, sold at the army stores for a mess tin, a 9-inch folding steel fry pan, and an enamel-ware cup which hangs from my belt by a leather thong. The growler will boil soups, mulligans, rice or potatoes; the fry pan is for fish and bacon; the baker for corn bread and squaw bread or biscuits. Start a small fire under the grate, with the growler full of soup or stew set on the back of the grate. Mix your cornbread batter, one cup flour, one half cup yellow meal, tablespoonful of baking powder, one egg, a pinch of salt, a thumb of butter, a tablespoonful of sugar, all mixed in the pan with enough water to make a thick batter. Grease baker and pour in batter until half full. Tend that cake religiously for the next ten minutes, keeping down the flames, turning over first one side then the other. In fifteen minutes raise the cover and you will find therein a golden brown cake risen, which is too good for anyone but campers and very honest persons. Set aside, leaning against the grate, while you drive the fry pan with flames and chunks of fish therein. Clean out the mixing pan and set on for tea. All this time the growler will be boiling furiously and by the time the rest of the culinary operations are finished you will have a whale of a mulligan ready to spoon out of it. The above is more than one man can eat.

Such a camp is a delightful loafing-fest. Most lakes have a boat somewhere on them to hire, or if not two dry logs will make a raft that will answer to get out beyond the lily pads. I usually start the day with coffee in the growler, hard-tack, or some left over corn bread. Out fishing before sunrise, when the lake is covered with mist and all nature is glorious. Back by ten, with fish in hand. Cook up a monumental breakfast. Loaf and observe the passing world of nature until five o'clock. By that time the wind has gone down and the lake is a shimmering glory of sunset colors, with the clouds just too wonderful in their roseate hues and all the heavens reflected in the waters. Grand time for bass! I fish until dark. Another big and leisurely meal; and so to bed.

To the nature lover such a camp is far from lonely, but if you prefer company you can do as I once did, take along two scientific "nuts" who did their own cooking and slept in their own tents. One of them lived in his bathing suit all day long and was too lazy to build his own camp fire, so he brought along a Steero solid alcohol outfit. His tent was a mere tarp, and to sleep free from mosquitoes he dressed up at night with socks on arms and legs and a sewed up bathing suit over his head. This party was no trouble at all. He stayed up all night studying beaver and muskrat with a powerful flashlight. By day he was swimming in the lake most of the time. The Indians thereabouts soon nicknamed him "Beaver." The other "nut" went hiking after snakes of all kinds during the day; both were a sketch and most enjoyable companions. No trouble to me at all; and they ate gladly all my spare fish.

on "your" little lake!

But when three or four fellows elect to camp together in June, I would suggest the Dan Beard or Camp Fire tent as one of the best. In shape it resembles a wall tent with one side sheared off, so as to leave a big open side filled with mosquito bar along the front. This open side has a flap which can be guyed out to form a rain and sun shade. All the beds can be arranged in a row inside, with the feet to the fire. It permits a bright and cheerful backlog fire out in front, a comfort not to be despised, the June nights being cold. By the same token it **requires** this fire, or chilly drafts will whistle through the tent at night otherwise, so see that a man-sized axe is along and some muscular brother to wield it. Such a tent, seven by eight floor area, seven feet up to the ridge, weighs from seven to fifteen pounds depending upon the material. Divided by four people it figures out two pounds of tent per man, approximately. Has

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Fly Fishing for the Big Ones

(Continued from page 514)

the sucker's business caution goes down before desire to profit by the engineer's extremity. A tomcat, bent upon raiding a bird's nest, is easily led away from the brood by the mother's simulation of a broken wing, and he leaves the certainty of the nest for the prospect of the mother—to the loss of both. Surely the old bird offers promise of no greater delicacy than do the fledgelings. No. But the instinct to take instant advantage of injury is born in the cat and it is so powerful it eclipses his other impulses.

That bass, as well as other predatory creatures, are influenced by that instinct is indicated by the way the large fish take the minnow. They do not float up and look it over, as usually they do the bug; instead, they rush it from a distance. Caution, satiety, fear, all seem to go down before an irresistible impulse to take instant advantage of "easy game." That is why the feather minnow is effective.

For this lure the angler will require much the same outfit as for the cork bug. The minnow casts easier and a lighter rod may be used, if desired, but the fish will run large and a five-ounce will not be found too heavy. Particular attention should be paid the leaders—wet, they should be capable of supporting at least two pounds—for the strike is often almost incredibly wicked and light leaders are sometimes snapped like glass. Greasing the line lightly with deer's tallow, thus reducing its inertia by floating it, will help to prevent this; but the headlong rush of even a three-pounder is an awful jerk for a weak leader.

Since the angler is to make his lure imitate the movements of a crippled minnow, he must learn how such a minnow acts. This, of course, depends upon the nature of the hurt and its severity, but in the great majority of cases the fish rises to the surface and lies there, struggling vigorously. From time to time it dips and dives, seemingly trying to regain the lower depths, but it is unable to stay down. It does not move rapidly from one point to another, nor does it travel in a straight line, and though in its struggles it may cover considerable water, it seldom skips or jumps.

If the feather minnow is to imitate those actions, there must be exact balance between its head, hook and body material, and its body, when wet, must be very flexible. A well-made lure floats barely awash, the body seems to be of good substance, and the whole appears to struggle helplessly at the slightest movement of the leader. Poor balancing or stiffness of body spells disappointment; such a feather minnow falls far short of what a well-designed one is capable. If it fails to suggest the amazing flexibility of a hurt bait fish, it is no better than any other fly rod lure. Bass may not be clever, but they are instinctive and the big ones have caught numberless crippled minnows.

With a properly made lure the angler will find it possible to take as large bass as can be taken from the same water with live bait. After his cast is made—very long casts are undesirable because of a long line's inertia—a weaving motion of his rod tip will cause the lure to turn from side to side, as if struggling vigorously, and little jerks of the line will make it appear to dip and dive an inch or so. The minnow should be worked a trifle faster than the cork bug, but it must not be worked rapidly. Crippled minnows can't swim fast, and the large bass know it.

What has been written on the subject of high visibility versus resemblance to natural food applies to feather minnows as well as to other fly rod lures, and the angler should make his choice of pattern with that in mind. However, very large bass are usually glutted, and glutted bass seem to strike best at patterns which somewhat resemble the kind of minnows about them. If the angler is out for quality, I believe his lure should suggest the minnows the bass are then taking, and this is supported by experiments conducted between May 12th and September 26th, 1922.

Early in the year the Capt. Sampson pattern, which roughly resembles a smelt, was by far the most attractive; later on Brann's Glory, the predominating color of which is yellow, beat it hands down. Occasionally, minnows of high visibility were extremely successful, but the two patterns mentioned were the most effective for large bass.

What is the best season for the feather minnow I do not know. In the northern States it is attractive from early spring until ice puts an end to the fishing; probably it will take bass whenever they will take live minnows. But its term of greatest service to the angler is during the hottest days of summer, for then bass sometimes refuse to strike at wet flies or cork bugs.

At such times the fish gather about underwater springs and at the mouths of cool brooks to feed on the minnows to be found there, working out in the late afternoon to pebbly points and rocky shoals. Before sport may be had the bass must be located, but whenever the angler notices a few bait fish in very shallow water, he may suspect the presence of large bass and use the feather minnow to advantage. Cast lightly on the shallows and worked slowly into deep water it seems irresistible; in obedience to instinct even glutted bass strike at it.

Paradise Regained

(Continued from page 528)

into one; and this can be accomplished only through the closest cooperation.

There are other plans that have been discussed tentatively, that of incorporation and capitalizing for the purpose of developing the Forest recreationally. The present organization is well qualified to take over a venture of this nature, but this phase of possible activities shall come in for the best possible and most serious thought, before final decision will be reached.

A membership in this association is pertinent to an intimate touch with constructive conservation. It is an exceptional opportunity to take part in the preservation of the vanishing wild beauty of our country. It makes possible the preservation of at least one vast wilderness area, so indispensable as national lungs, breathing places and playgrounds.

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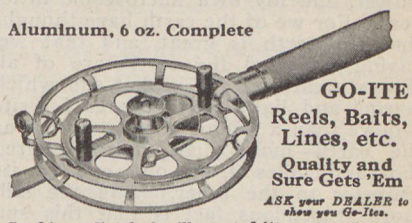
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do not mean to imply that I think he is in my form, or in any particular form. But he is Life. And it is his intention and his desire that every living thing that is worthy of life be a part of him. I am almost Indian in this faith. I can hear the buoyant, cheering call of Life in a waterfall. The inspiration of it comes into my own body from out of a whispering tree, from a bush glowing with bloom, from a flower, from the song of a bird, from the rain itself. I find great peace and contentment in my faith that this God is everywhere, and that we may meet him face to face fifty times a day if we throw off the hard shell of our egoism, and realize that all nature is God—and that we, as men and women and children, are a part of that all-embracing nature.

Even now the sun is filtering through the tree-branches upon this partly written page. I look at it, and I see again the inconceivable greatness of the Supreme Power, and my own microscopic littleness. For we of the earth have thought that the earth is great, and that we, having inherited the earth, are of all branches upon his partly written page. I look at it, and I see again the inconceivable greatness of the Supreme Power, and my own microscopic littleness. For we of the earth have thought that the earth is great, and that we, having inherited the earth, are of all things greatest. Yet is that sun which warms and lights my page as I write —more than a million times as large as the earth—more than eight hundred thousand miles from one end of its diameter to the other. And the still more stupendous fact is that this sun is itself only a small bit of mechanism in the mighty forces of infinity, for there are **a hundred million other suns in space,** each lighting and warming its own worlds—innumerable worlds—each peopled with its own type of flesh and blood, and each possessing, perhaps, its own peculiar forms of "civilization" and its own savagery.

Just that great, and vast, and all-embracing is the handiwork of that vital force which rules all infinity—and to which we have given the name of God.

And here I emphasize again that great truth which nature has impressed upon me—that, just so long as man considers himself the one and only chosen part of God, and therefore next to him in greatness, just that long will his egoism and self-conceit blind him to the greatness and glory of the real truth, and to the glory of the faith which might be his. I believe that Christ was a great teacher, that he was a great student of his times, and incorporated into his teachings all that was highest and best in the teachings of other great men who had lived and died before him. And I have always regretted that Christ was unfortunate to have for his historians a set of men who were unequal to their task, many of them narrow-minded, moved by "visions" and superstitions instead of fact, men who believed in all the miracles of the imagination from conversing with angels to stopping the sun,—men utterly incapable of writing down calmly and truthfully those mighty teachings of Christ which, had they been written as they were spoken, would have meant so much for the world to-day. For I believe, in my own heart, that Christ was the greatest lover of nature that history knows of to the present day. I believe that in the many years of his "disappearance," Christ was not only

God's Country

(Continued from page 535)

studying the teachings of the past, but that, close to the breast of nature, he was learning the splendid truths of life —all life—which were afterward the very heart and soul of his messages to mankind.

I believe that Christ, could he return to earth to-day, would say: "My biographers have given you a wrong impression of me, and they have misquoted me. What my soul was called upon to teach nineteen hundred years ago, they have clothed in the raiment of superstition, of misunderstanding, and of impossible miracle. For I am a man, even as thee and thine. But I have found the true faith. And that faith, as I told them then, depends utterly upon the dropping of the scales of self from man's eyes, and his understanding of all life. For that I gladly died."

The greatest regret I have is that Christ, as a man, did not foresee more clearly the tremendous influence his teachings were to exert upon humanity through the ages. Had he guessed this, he would have written down with his own hand those teachings which were so carelessly left to the mercy of superstitious—frequently fanatical—and at nearly all times incapable biographers. For Christ, of all men that ever lived, was undoubtedly one of the best and the most humble. His teachings came straight from his heart. He did not intend that they should be smothered in hyperbole, metaphor, and rhetorical embroidery until no two living men could agree absolutely upon the meaning. I believe that he spoke simply and directly, for only in that way could he have reached the hearts of the masses. And I believe that the greatest of all his lessons was the lesson of humility. As a man, he had dropped his egoism, had submitted himself to the Master of all life, and in that submission he had found the truth, and the glory of a great faith. The misfortune of the humanity to follow in after-ages was that the world of Jesus Christ was small—so small that by word of mouth he could reach from end to end of it. Had he dreamed that there were still undiscovered worlds so great that in comparison his own was but a handful of dirt out of a wagon-load, I am convinced within myself that the world to-day would not be struggling to understand a faith written in parables and riddles, for Christ would have set his own hand to the task which others so poorly accomplished.

With such a priceless inheritance in the form of Christ's own handiwork, I am equally sure that humanity would no longer have an excuse for its egoism, or be ashamed of that humility which is necessary to the understanding of life, and essential to the possession of a deep and abiding faith.

I have, at times, heard intelligent people express amazement that I should dare to place human life on an equal level with all other life, that I should so "blaspheme the Creator" as to say that the life in a two-legged animal who can talk is the same as that in a flower or a plant or a tree or some other animal which cannot talk. I have sometimes allowed myself to point out the innumerable advantages possessed over man by many living things which have no language, as we know language. I could fill a dozen volumes with word-pictures of the thousands and tens of thousands of advantages which living things outside of man possess over man, and which, if man could achieve, would be stupendous miracles. But man, collectively, is blinded by his egoism to the marvelous attainments of all life that does not walk and talk as he walks and talks. When confronted by the incontrovertible wonder and apparent miracle of other life as compared with his own I have nearly always found that men and women fall back, as a last resort, on the absurd and shallow argument: "But this other life you speak of has only instinct. It cannot talk; it cannot reason, and therefore it is impossible for it to have a soul."

Once a beautiful young matron said to me, "There is much in your creed that is inspiring and beautiful, but it reaches a point where it is inconceivable, for you must concede that a human being is the most perfect of all created things."

I gave her an exquisite rose which I had plucked from my garden only a few minutes before.

"There are, outside of men and women and children, innumerable things more perfectly created than this flower," I said. "Are you, in your youth and beauty, as perfect as that rose?"

And yet I know that such arguments as these, innumerable though they might be, cannot prevail until men and women bring themselves face to face with nature itself, filled with a willingness and a yearning to understand. They point out the pests of life—the serpent, the deadly insects, the plants that scar and poison; yet they cannot see themselves as perhaps the deadliest and the most relentless of all pests. For it is one of the mysterious laws of Creation that every living thing—flower, and tree, and beast, and man—has a pest born unto it; and unto these pests other pests are born, until at last,—when the thing is analyzed,—a pest is a pest only in so far as its enemy, and not its friends, judge it to be a pest. If the world to-day were eliminated of human pests as each individual in the world might judge for himself, how many of us would be left alive to-morrow?

And always, when I have listened to the age-old arguments prompted by man's egoism and self-glorification, I love to return to the peace and the comfort of nature, whether that nature be in the form of a deep forest, a clover field, an orchard, or the little back plot of a crowded city home. And if I am where there is no cool earth to stand my feet upon, I find my peace and rest in the printed pages which describe that nature-world of mine. From the most beautifully written volumes to the honest pages and unembellished fact of farm-journals, I have, times without number, found enthralling interest, consolation, and the strength and courage of the cool and glorious earth itself. Nature's Bible is not hard to find. It is everywhere, living, breathing, printed—the one universal and ever-present Book of Life.

(To be continued)

The last installment of this great serial will appear in our July issue.

John Moreland on the Upper Mississippi

(Continued from page 526)

strikes. "My, but these fish are quick strikers. I really believe they are quicker than trout."

"Twice as quick, as you will find, and you must strike twice as hard as you do trout if you want to sink the hook into these river fish."

Finally with the help of Bill who pulled hard on the oars and jumped the boat every time Moreland had a rise, a fish was hooked and the first wild rush it made down stream nearly snatched the rod from his hand. After a hard ten minutes' fight, Bill netted a good two pound small mouth.

"Say, but these fish are jumpers, and fight like demons!" said Moreland. "I'm glad I came—only I must get on to the knack of hooking them."

"You strike entirely too slow, and to get a hook into these fish you must put quickness and muscle into the strike. But you'll learn if you keep at it," said Bill.

"You bet I'll learn. I've got to learn—no two ways about that. I simply must get a bigger bass than Walter Strong."

(To be continued in the July issue)

Shotgun Actions

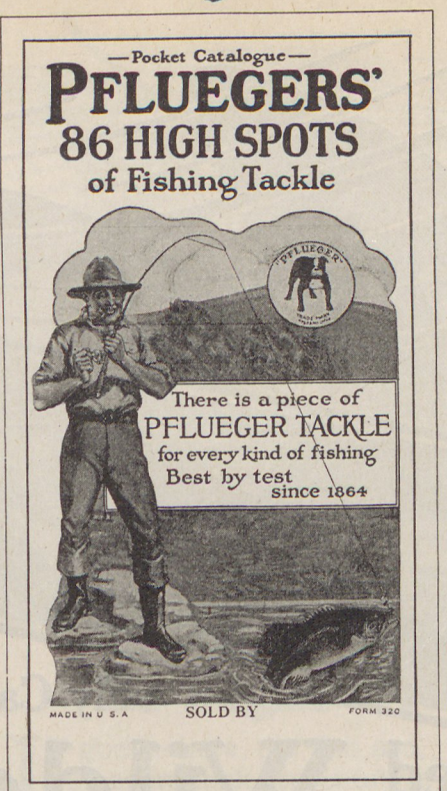
(Continued from page 541)

Applying this principle to our shotgun actions, in the one case we find the whole force of the forward thrust of the barrels must be taken up by the comparatively small area furnished by the hinge pin, less than one-fourth its circumference; and this acts on the lug like the edge of the chisel. In the other case we find the broad area of the front face of the rear lug bedded firmly and smoothly against the equally broad area of the shoulder of the receiver, and acting like the head of the chisel, and to this must be added, in case there be an opportunity for the slightest degree of "compensation," the additional area of the bearing of the forward lug upon the hinge pin, in itself equal in resistance to the entire lug mechanism of an American gun. Therefore we have in the foreign gun a rear lug which alone is vastly stronger and more durable than the entire lug system of the American gun, with a forward lug of equal strength with the American, in reserve.

Turning now to the extension rib as a factor in restraining the forward movement of the barrels, the first point to consider is the crossbolt.

In the American guns there are two types, which we will term the "rotary," which rotate on an axis parallel to that of the barrels, and the "radial" which rotate on a vertical axis. Both have a projection or "bolt" which passes through the hole in the extension rib, and both look as though they might hold back as well as down; but they do not. A good example of the radial type of bolt is found on the Royal three-barreled gun; once when one belonging to the writer broke through the right side of the frame, and the breech of the right barrel stool 1/32 inch away from the standing breech, the gun opened freely, the crossbolt not binding in the least. If more proof is needed, notice the thin strip of metal back of the crossbolt hole in the Smith, Fox and Ithaca guns, and think how much of a forward strain it would stand. Its only function is in holding the barrels down, and it is no more efficient for this purpose than is the plain bite of the LeFever and Remington guns. This type of crossbolt cannot be made to hold against the forward thrust of the barrels for the reason that in order to do so it must be fitted so closely that it bears before the barrels have moved forward any appreciable distance. One-thousandth of an inch play will not do, as even this much would let the full strain on the lug, and it must give that much before receiving any support. If it does, this permits a hammer blow which constantly grows in length and destructiveness. And it is impossible to obtain this close fit in a receiver constructed as are those for these "radial" and "rotary" bolts, for the reason that one cannot get to them to work or fit them by hand and no machinery is sufficiently accurate.

[The space limits of our magazine oblige us to divide Mr. Newton's article and conclude it in the July issue.—M. L. T.]



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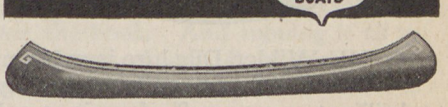

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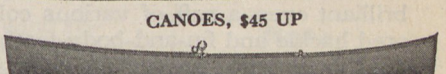

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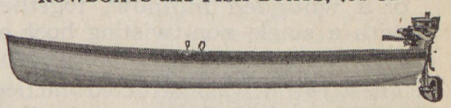

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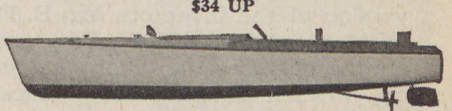

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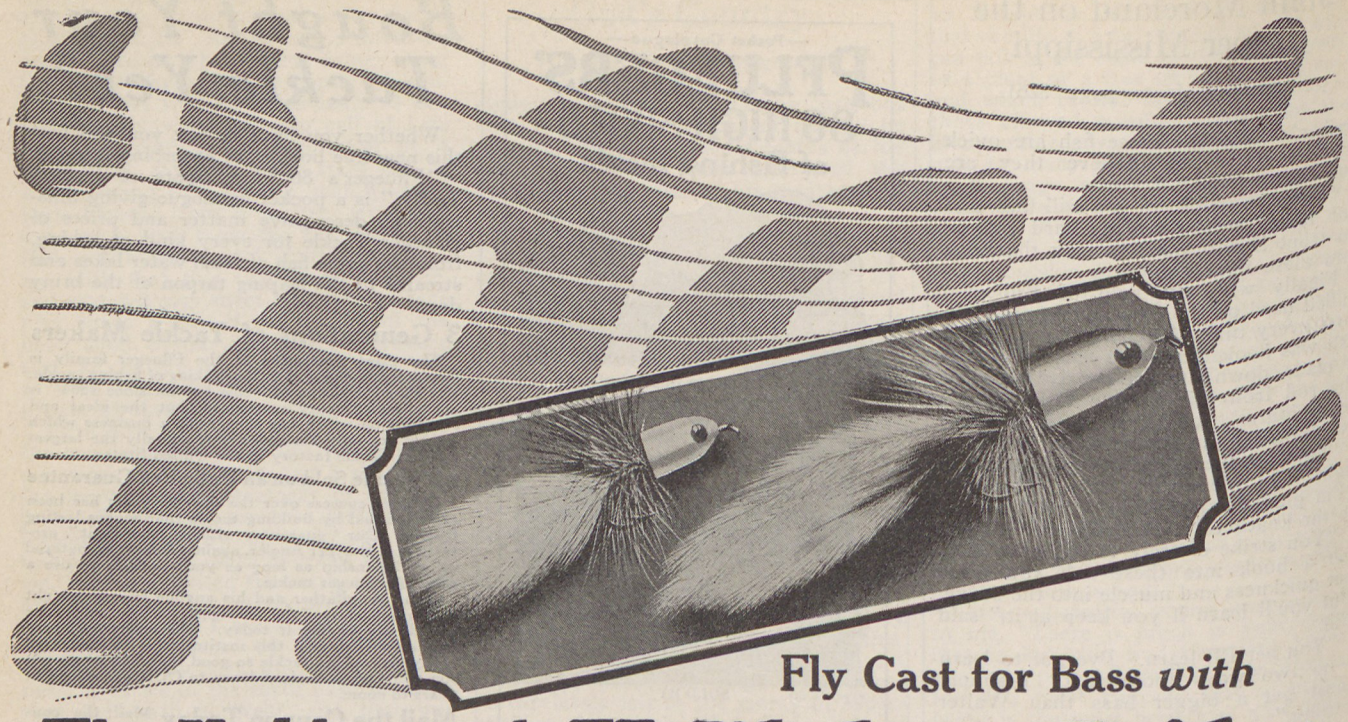

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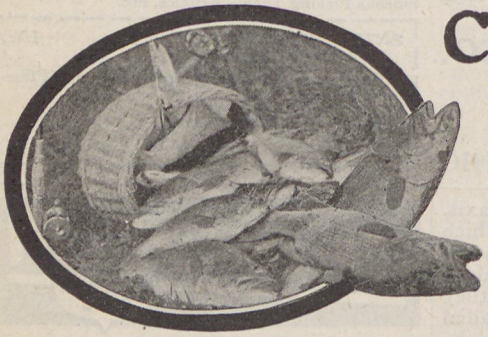
Cork Bodied Feather Lures



THIS is the wonder lure, imitating the action of a *wounded* minnow, that last year swept the country with its wildfire success in fly casting for Bass and Northern Pike. Never in our history of bait making have we received such unanimity of report as on certain qualities developed by this lure. Literally hundreds of letters emphasize the same points of extraordinary success in supposedly "fished out" waters, unaccountable vigor and smashing violence of strikes, the gamy fighting qualities and proportion of landed strikes brought out by its single hook effectiveness.

And not only that, contrary to all experience with bass flies of ordinary pattern, the catches ran uniformly to both *greater numbers* and *record breaking size* of fish.

Even if you are not a fly caster, the privilege of using this bait alone makes it worth your time and patience to take up this sporting phase of angling.

And as for the old timers—you'll find Wilder-Dilgs in practically every kit.

THE Wilder-Dilg lure is made up from a light enameled cork body, brilliant eyes, a ruff of various colored hackle and fin-and-body-feathers that impart the curious rolling, dipping and surface-seeking throes of a *wounded minnow,* together with a single non-twisting hook of correct shape and size.

These patterns, constructed and tied by Heddon, are the only authorized version of the inventors, Mr. B. F. Wilder and Mr. Will H. Dilg, and are the only designs wholly carrying out their scientific and practical principles.

Bass Size in 12 patterns, including both standard and original effects. Length 3¼ inches. No. 1 O'Shaughnessy hook.

Trout Size in 6 patterns, length 2 inches over all. No. 6 O'Shaughnessy hook.

Either Size—each 75 cents

Color Booklet Free

Free Booklet and Color Sheet show all patterns in full detail and correct colors, together with the inventors' fascinating story of the experiments and results which led up to these marvels of luring and hooking certainty.

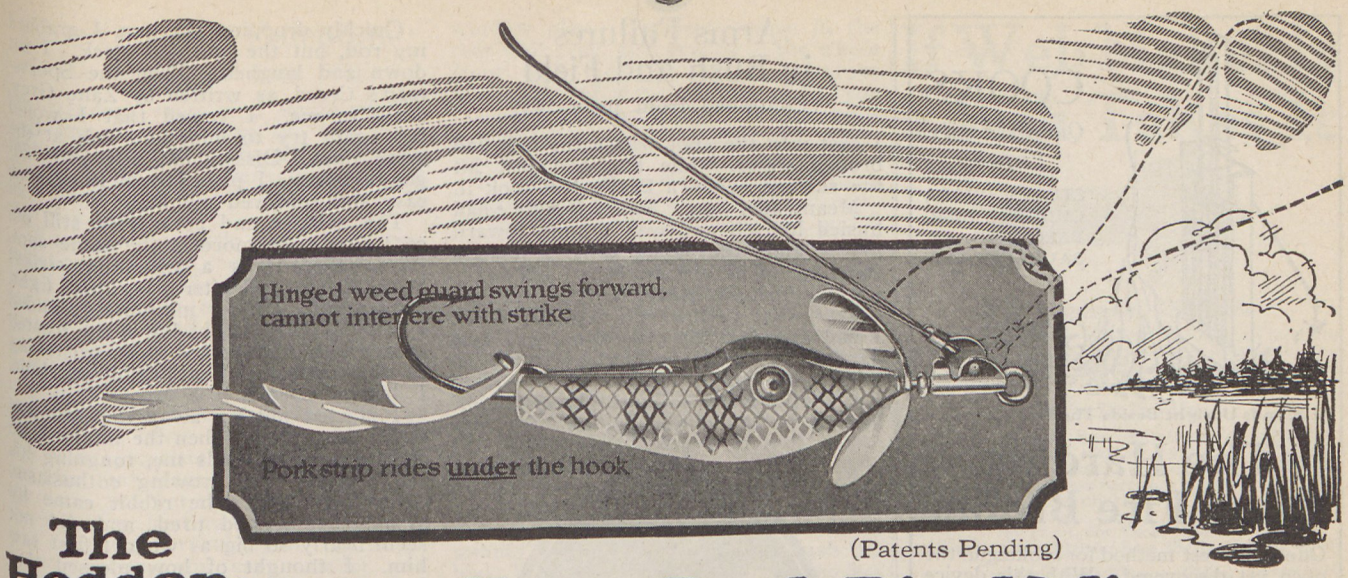
Also in Trout Size

(Illustrated Above)

In answer to insistent demand, exquisite Heddon craftsmanship has now produced the same design and *wounded, rolling* principle in dainty miniature size for trout. These lures are indescribably attractive in color and wholly unique in tempting action and effectiveness.

"Action is Right" Grinnell, Ia.

"In Northern Minnesota, I gave your Wilder-Dilg Lure a thorough testing out. It is the greatest artificial lure I have ever seen for a fish getter. The bass strike it hard and frequently and pickerel simply eat it up. I caught my legal limit one evening between seven and nine in a stretch of less than half a mile of rushes on just one Wilder-Dilg lure. The smallest bass was a trifle over two lbs." R. F. PRATT, 918½ Main Street.



(Patents Pending)

The Heddon-Stanley Weedless Pork-Rind Minnow

To begin with—Weedless

IT goes where the fish are. The hinged weedguard gives full open hook presentation to the striking fish, yet effectually guards against becoming snagged in the weediest water. Prevents hooked fish from fouling, insures full usability in floating or sunken vegetation, in snags, lilies and rushes.

Triple-Luring—Spinner, Minnow-Like-Body—Pork Strip

The casting body is of Pyralin, treated in the superlative Heddon attractiveness of finish. The loosely mounted spinner revolves freely at any speed and is practically proof against stoppage by grass or weeds. The pork strip is die cut to a special design imparting excessive animation in the water and minimizing likelihood of obstructing the hook point.

Definite Improvements Over Existing Types

Reinforced hook anchorage combining rigid hold with easy removability; slow, self-clearing spinner; quick buttoning of strip to body; special cutting of the pork strip; pork riding *under* the hook. And topping it all is the beautiful Heddon body treatment in plain and scale finishes now for the first time made available in conjunction with the pork rind lure.

It has the right weight and minimum wind resistance for perfect casting, runs to any depth, works at any speed. Range of finishes suits it to every season, every hour, every condition of wind, weather and water.

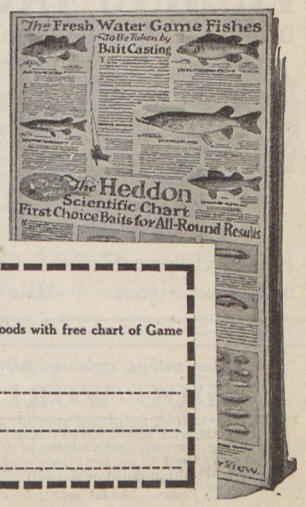
At Your Dealer's in Colors as Follows

All White. Red Top, White Bottom. All Red. Green Scale. Pike Scale. Shiner Scale.

Weedless as shown in illustration	$1.25
Weedless with surface attachment	1.35
Plain without weedguard or surface attachment	1.00
Plain with surface attachment only	1.10
Pork Strips, 12 in a bottle	.50
Surface attachment only	.15

Note

The sale of the regulation Stanley line of Perfection Weedless Fly, Spoon, and other hooks will hereafter be conducted by the Heddon factory.



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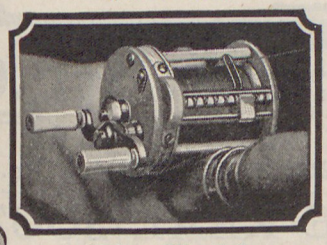
SINGLE-HOOK treat for the bait-caster. Beautiful, almost weedless, deadly in hooking and holding. Body 3 in. long. Four brilliant colors.

$1.00 each



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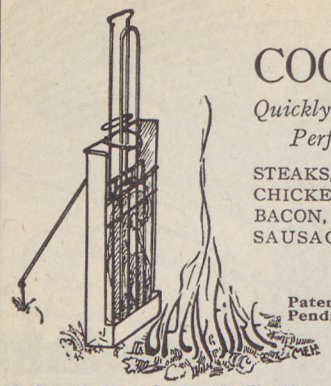

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Offers the best method for cooking in the open yet discovered. With this device the food to be cooked is presented to the direct heat of the fire away from the smoke and flame.

The Open Fire Broiler is the result of extensive experimenting in all forms of outdoor cooking. It surpasses other devices.

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Every auto-tourist, picnicker, camper, fisherman (the inventor is all) should take at least one Open Fire Broiler. With it, their kit is substantially reduced in bulk and weight, and properly cooked food is assured. One trial will make a convert of every outdoor lover and with each time it is used the simple efficiency and perfection becomes more apparent.

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No. 1 will hold a 3-lb. steak (bone removed) or a 3-lb. chicken. All juices of the cooking meat are preserved in the pan at the bottom.

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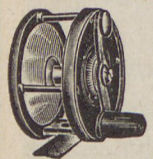

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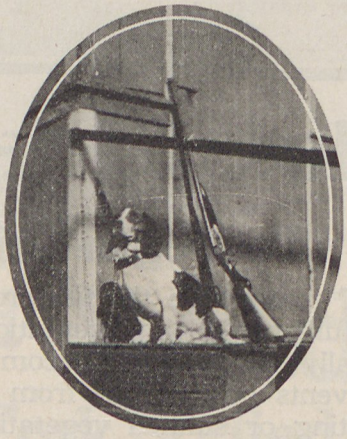
1922 Lake St. CHICAGO

Arms Failures in Bush and Field

(Continued from page 543)

I cast into the spot where the fish had broken water. The bait had just hit the surface, when a heavy fish took it.

Meanwhile, my little Beagle had busied himself and was coming toward me singing that song only a Beagle can sing. I stole a moment from fighting the fish to glance around. There I saw what seemed the biggest rabbit I had ever laid my eyes upon, and that darned fish was stubbornly trying to monopolize my attention in the lake. But the gun was calling! The decision had to be made quickly, and the gun



"The Merry Little Beagle"

won. Dropping the rod I grabbed the gun as the rabbit was sneaking along the shore. At my quick movement he shifted into high. I pulled the trigger to the right barrel. There was a dull click. Desperately, I tried the left barrel, but with the same result. Then I remembered that I did not reload after shooting the hawk.

Quickly dropping the gun, I grabbed my rod, but the line was slack. I sat down and laughed. Then the Sportsman's Creed, as written by Zane Grey, came to me. I vowed that I would not again try to hunt and fish at the same time. Dissembling my little 20-gauge Ithaca, I placed it in its canvas case and retrieved my line.

The spinner and pork were still on, so I cast once more in the same spot. Again there was a smashing strike! I struck, too, and after a beautiful fight, lasting fully fifteen minutes, I landed a fine, big pike. As he lay in the frosted grass, with his spotted sides glistening as they reflected the bright sunshine, I decided to call it a day.

I started putting away the rod and tackle once more, when the merry little Beagle came towards me, tonguing his masterpiece with growing enthusiasm. A moment later, the rabbit came by again. He looked tired, and did not seem nearly so big as when I first saw him. I thought of how pleased that bunny would feel when he did not hear the voice of the hound behind him. My heart was filled with mingled emotions of gratitude and humility. I went to where the rabbit had passed, and when the little hound came up, I caught him, put on his collar and patted him, in reward for his faithful trailing.

When I laid the big pike on the kitchen table, my good wife looked at me and in her blue eyes I could see that "I told you so" expression. That night, as I sat by the fire and heard the "thump—thump" of the Beagle's tail on the floor, I knew that I had not only learned a lesson, but was well pleased with the day afield, with the merry little hound, the rod and gun, and the great outdoors!

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"Fish and Game Cannot Vote"—Judge J. M. Dickinson

Our Outdoor Calendar

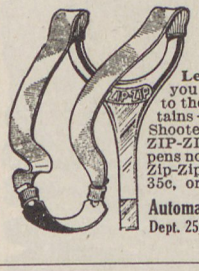
(Continued from page 558)

the standing room and space of the wall tent, but also has the one thing that the wall tent lacks, a bright open fire in front and a reflecting wall at back to turn down the heat rays upon the men inside.

If taking your little lady along, two selections of tents come to mind. The small 5x7 foot Handy tent, weighing seven pounds, in ordinary white duck canvas is a good one. It is like a square 7x10 foot miner's tent cut in half, so that its single erecting pole is in the front instead of the middle of the tent. The front is of two flaps of light cloth, tying together with tape. She will appreciate the standing room up near that front peak. Tying back the flaps, you get reflecting surface for the campfire heat rays. A good little tent for two, particularly in the north country where you have smaller and more deadly flies than the mosquito. My wife and I used it on a hundred and twenty mile canoe trip across the Adirondacks, and found it a blessing; for, once inside and the flaps tied, we used the flasher judgmatically to locate every midge, black fly, squeazlegeaque, spider, and other creature that had no business in tents and murdered him with an agile forefinger. After which the sleep of the truly just. A paraffined muslin tent of this design would be a poor thing, for it has no ventilation aside from the seep of the night air through the weave. If going in for paraffine, for sake of the lightness, I would suggest buying the smallest size of wall tent and sewing in a triangular window about two feet square in the rear wall peak, also sewing in the whole front with mosquito bar in generous gores. So, of a midsummer night, you can get a breeze through the tent without an invasion of the insatiable insect world.

In any event, a closed tent of some design, if a girl is along. She prefers a reasonable amount of privacy; and it works both ways, too, for the boys **will** have their morning dip **au naturel**, and it is well to have milady immured in canvas walls at that time, about sunrise. Once, milady donned **her** bathing suit to partake of that early morning swim, whereat there was a mad rush out of water by all the male population. All found hiding places save one, and that poor naked wight hopped for a tree, his fat bare knees and red face poking out around the trunk, the while he begged, implored, and conjured milady to go back to her tent just a minute until he could make a dash for his! Which she did, laughing immoderately.

As for the tackle and ways for taking bass, of fly rod and bait casting rod, of the war of plug and fly, let us defer discussion until July, when the bass season is on us indeed.



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By

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"This poem is a tragically beautiful American epic based on an ancient Indian legend of the 'fire bird' and written in the varying rhythms of the forest, falling now and again into the wash of the waves or the winding music of the canyons."

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The Wigglakle, 75c Each

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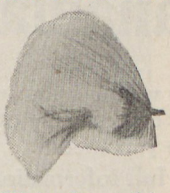
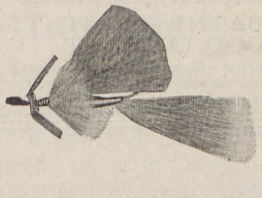


Webs Deerakle

A floating lure with a long bucktail wing. It has a wiggle in every hair. The stiff bucktail hair forms the body, shielding the hook from weeds and snags, but so delicate that they do not interfere when the fish strikes. Each 50c.

Hairakle

An early season fly. Twelve patterns representing the insect in the creeper stage before the warm sun develops them to a flying insect.....Each 30c.

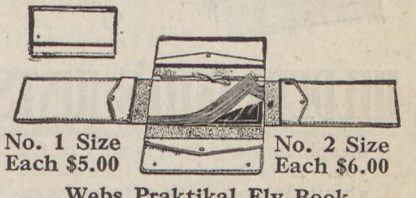


Webs Casting Spinner

A weedless weighted fly spinner with bucktail tail and bucktail hackle. Each 75c.

Webs Spinner Flies

A high grade fly made with reversed reinforced wings on hollow point hooks.....Each 20c.



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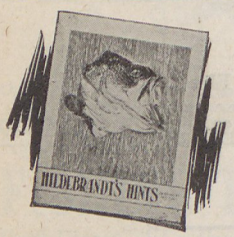

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Zane Grey's Sea Angling Page

(Continued from page 519)

—and consequently the growth is slow, but immediately the smolt migrates to salt water there is a very rapid growth, owing to the abundance of food, and the lines of growth are much wider apart. This condition of things obtains during the first summer in the sea, but when the water gets colder in winter, and food becomes scarce, the growth becomes stunted, and the lines of growth appear like a dark band on the scale, in consequence of being much closer together, and this is called the winter band or hibernation mark, so that the summer lines of growth and this winter band complete one year of the fish's life. This, then, is the way by which you can calculate the age of a salmon.

This process is what goes on in the sea, but a very different thing happens when the fish returns to the fresh water of the river. The chief run of salmon from the sea occurs in the early spring, and at this time the finest fish for the table are caught in the nets along the coast and at the mouths of some of our finest rivers. These salmon arrive at our coasts in the very finest stage of perfection. They enter our rivers, bound for the spawning beds, which means a journey of many miles before they reach them. Salmon deteriorate in condition the moment they leave the salt water, and it is difficult to believe it but nevertheless it is a fact that these fish undergo a long fast of ten or even twelve months before they are sufficiently matured to spawn. This means that in course of time the body shrinks and becomes very much emaciated and discolored, so much so that it is not easy to recognize the bright silvery-looking fish which entered the river some months before. In consequence of this great change in the fish from a prolonged fast the outer coating of the scales becomes too large for the body, and the outer edge of the scale gets disintegrated and ragged—much of it disappears altogether. One reason why this takes place is, I think, in consequence of the low condition of the fish, being unable to nourish the outer edge of the scale. Just as the leaf of a tree begins to wither at its outer edge when autumn comes on, and the sap of the tree descends, so the outer edge of the scale of a fish is affected when the body is unable to provide nourishment for it.

This, then, is the first step towards the spawning period of a fish's life.

After the salmon spawns it returns in course of time to the sea, where it quickly recovers its condition, but it still has this injured portion of the scale. The wound with voracious feeding soon heals up, and the scale recovers its normal condition, but the healed-up wound is still to be seen on the scale—a veritable cicatrix or scar—and this is the clue to be found on a scale which determines the important fact as to whether a salmon has spawned or not. Before scale examination gave us some information regarding the life of a salmon it was commonly supposed that salmon spawned every year, but research has upset that idea, the real fact being that few salmon spawn more than once, a very few twice, and it is a most rare thing to find a scale showing three spawning marks, though I have in my possession a slide which shows three spawning marks, and proves that this fish had spawned four times, as it was caught as a kelt returning to the sea after its fourth spawning. This fish was caught in the experimental nets at the mouth of the River Add, Argyllshire. It was marked, and if it returns again to this river, which it may do next summer, it should bear on its scales no less than four spawning marks; and, so far as my experience goes, such a scale has never been found up to this date. It would be a most valuable addition to any student's collection of fish-scales.

Such, then, in a condensed form, is the history of a salmon as told us by a study of its scale.

Sea-Fish

The same characteristics of periodic growth are marked on the scales of many of the sea fish.

This is very apparent on many of the Gadidæ genus—such as the pollack, haddock, whiting, and others of the same race.

The Pleuronectidæ also show signs of the same periodic growth, but not quite so markedly as those of the Gadidæ. One of the most interesting points to be noticed in the Pleuronectidæ, or fish swimming on their sides, is the strange metamorphosis from a round to a flat fish. They are all hatched as round fish, but after six weeks from their birth become swimmers on their side, and in the case of soles, plaice, dabs, etc., the left eye moves over to

the right side, the fish gradually expands in breadth, and tilts over on its side, gradually getting deeper in the water till about the fortieth day after hatching it matures into a flatfish, assumes a brown color on its top side and white underneath, and is then about three inches long.

The white color on the under side is accounted for in this way. Mr. Cunningham, whose valuable book on the sole is so well known, conducted experiments to show that the white under side was entirely owing to the shutting off, so to speak, of the rays of light from that portion of the fish. He arranged a series of mirrors so as to reflect light underneath a tank at the laboratory at Plymouth, where some plaice were confined, and caused light to be reflected to the under sides of the fish, and so successful was the experiment that he caused the under side to become the same color as the upper side, proving that the absence of rays of light to that portion of the fish was the undoubted cause of the white appearance. This same experiment is brought home to us by tying up a lettuce to bleach the interior, or by putting bulbs in a cupboard where light is shut off, and the growth will become more or less bleached.

Flatfish also have the power of assuming the coloration of the sand or bed on which they rest. This is caused by a series of pigmentary cells on the brown side having the power of exuding the right color of the sand-bed, and thus the fish becomes practically invisible to its enemies.

The scales of sea-fish are divided into two classes—cycloid, or rounded, and ctenoid, or comb-like—owing to the spines on the exposed portions of the scales resembling the teeth of a comb. These spikes are readily felt in passing the hand over the surface of a sole, a dab, and other fish.

Every fish has two little stone-like substances in its head, which are called otoliths, or ear-stones, and by means of which fish are sensible to the vibrations of the water, much in the same way as human beings are sensible to the vibrations of the air, which we call hearing. These otoliths are to be found in two little cells at the back of the brain, and attached to it by means of very fine ligaments, so that they are in communication with the brain, and are similarly connected with the vertebræ. They vary in size to a great extent—for instance, the otolith of a 15 lb. cod weighs 160 times heavier than that of a salmon of the same weight, and about 13 times heavier than a halibut's otolith.

The haddock seems to have the heaviest otolith for its size in all the Gadidæ tribe. The otolith of a plaice is a very beautiful object, showing a series of light and dark rings, by which the age of a plaice is easily ascertained, but the otoliths of all the Gadidæ tribe are too opaque to be of the slightest use for this purpose.

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Here is an Opportunity for Trout Fishermen

Dear Editor:

My wife and I are going to Montana in August for the trout fishing and we would like to find four congenial people for our party thereby materially reducing the proportionate expenses. We will outfit in Ovando, sixty miles east of Missoula and forty miles north of Drummond. Our permanent camp is located seventy-five miles north of Ovando on the Flathead River,—a three days' jaunt on horseback, with a pack train.

I have engaged the same guide and outfit I used in 1921 but the friends who accompanied me on that trip are unable to go this year.

This is wonderful country and I never whipped a better trout stream. The expense for a party of six will be $10.00 per day apiece which includes everything except bedding and clothing.

Sincerely yours,
H. H. Rogers,
Fort Wayne, Ind.

A Letter with Tears in It for the Thinking Sportsman

By THE EDITOR

EVER since the first issue of this magazine I have attempted to write a "Come On, Boys!" editorial for each issue of our magazine. To the best of my ability I have attempted to make these editorials a simple statement of the conditions of sports afield and astream throughout our common country which every man of us loves with every drop of blood in his body. I have tried to my utmost capacity to show to my brother sportsmen the great need of this National Organization.

Those who have read my preachments know that I have repeatedly stated that the conservation activities of every state and of the Federal Government itself are no more than a drop in the bucket when compared to the need. And I think I have proved that unless the sportsmen of this nation get together in great numbers we have no chance of securing appropriations for a sufficient number of fish hatcheries and wild game farms. Members of our State Legislatures vote only for appropriations backed up by great numbers and the organized sportsmen's voice of each of our states is no more than a whisper and it consequently follows that conservation and appropriations for fish hatcheries and wild game farms receive little or no attention from our State Governments. This will continue in every state until our Izaak Walton Chapters total a large number. The fact that you are in spirit with the Izaak Walton League of America is not worth a tinker's hurrah to sports afield and astream in this country. Unless we can count you as an enrolled member you are useless to Outdoor America — think it over, my brother.

I would give a great deal to have written the letter by Everett E. Lowry, which follows. Mr. Lowry is nationally known as a cartoonist, and he is also a first class writer and fisherman. His letter presents in a heart appealing way the whole subject of the need of your coming into the Izaak Walton League of America. Read this letter for your soul's good and for Outdoor America's sake.

"We Pledge Ourselves to Do Our Best to Restore to Posterity the Outdoor America of Our Ancestors"

FOR those who are blessed with an abundance of this world's goods and are willing to contribute toward maintenance of the work of the League the directors have authorized additional memberships. Your dollars will be wisely expended in performing the tasks of the League and bringing about the restoration and protection of the Outdoor America of the golden yesterday.

***Contributing Member*— $25 or more annually**

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***Founder of the League*— $1000 or more**

***Patron of the League*— $5000 or more**

Make Checks payable to Chas. W. Folds, 208 S. La Salle St. Chicago, Ill.

Dear Editor:

On my visits back home I have noticed how the boys there still get up at 4 o'clock in the morning to go fishing, in spite of the fact that the Seiner, the Dynamiter, and the Polluter have long since beaten them to it. And it is a shame the way they do blame their own lack of luck, the general cussedness of the fish, and the dear old river.

You see, these chaps I have in mind are not trained to dash up into Wisconsin or Minnesota every time the urge strikes 'em. They figure that wherever there's water there should be fish, and so they go, and go, for they are natural-born anglers, and must fish some place. They are the lay poets who must get out once in a while where the sun shines on the riffles, and cool shadows creep over the quiet places, the kind of birds who must seek out the spot where Mrs. Blue Crane builds her nest, and a shell-paved path leads to the door of Mr. Muskrat's den.

Every so often these boys I'm telling of are seized by that strange nostalgia for the things that were, and they put off up the river to doddle all day where the green waters gurgle over shallows and the swallows skim, and last summer they took me along.

From a scenic standpoint it was a memorable outing, but the fact that we were after fish, and did not get enough nibbles between us to dent a cream-puff almost spoiled the picture.

Not even a natural-born fisherman can live on scenery alone. It's too much like going visiting and finding nobody home, and I'm afraid that in time some of these boys (with a little gray in their hair now, mebby) will get tired of kidding themselves, and blaming their luck, and that they will put away their fishing tackle, together with their dreams, and that would be bad. So you see I am going to drop two or three copies of the Izaak Walton Magazine among these discouraged friends of mine so they may know that the jig is not yet up, and that if we all join hands and pull together we may again have Johnny Bass and Peter Pike back in our Little Bedtime Stories, and all will be Jake on the running stream.

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